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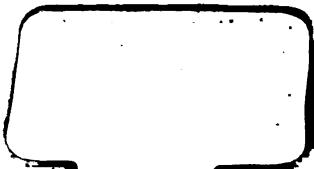
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- Volume 1 contains No. 1 part 1, (President's Message and Report of Secretary of Interior.)
Volume 2 contains No. 1 part 2, (Report of Secretary of War, 1st part.)
Volume 3 contains No. 1 part 3, (Report of Secretary of War, 2d part.)
Volume 4 contains No. 1 part 4, (Reports of Secretary of Navy and Postmaster General.
Volume 5 contains No. 1 part 5, (maps.)
Volume 6 { (part 1) contains No. 2 (Finance) and No. 1 special session.
 { (part 2) contains No. 3 to No. 6, and No. 2 special session.
Volume 7 contains No. 7 to No. 28, except 14 and 22, parts 1 and 2.
Volume 8 contains No. 22 part 1.
Volume 9 contains No. 22 part 2.
Volume 10 contains No. 29 to 48, except 37, 46, 47, parts 1, 2, 3, and 4.
Volume 11 contains No. 47 part 1, Patent Office—Mechanical.
Volume 12 contains No. 47 part 2, Patent Office—Mechanical.
Volume 13 contains No. 47 part 3, Patent Office—Mechanical.
Volume 14 contains No. 47 part 4, Patent Office—Agricultural.
Volume 15 contains Report on Commerce and Navigation.
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MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

COMMUNICATING,

In compliance with a resolution of the Senate, the report of the special agent of the United States, recently sent to Vancouver's Island and British Columbia.

JANUARY 31, 1859.—Referred to the Committee on Foreign Relations.

FEBRUARY 17, 1859.—Ordered to be printed.

To the Senate of the United States :

In compliance with the resolution of the Senate of the 25th instant, I transmit a copy of the report of the special agent of the United States recently sent to Vancouver's Island and British Columbia.

JAMES BUCHANAN.

WASHINGTON, January 29, 1859.

WASHINGTON, January 8, 1859.

SIR: In accordance with your letter of instructions, dated August 2, 1858, I proceeded, without unnecessary loss of time, to Victoria, Vancouver's Island, where I arrived on the 20th of September, having been detained twelve days at San Francisco, awaiting the departure of a steamer. On my arrival, I found that a large number of those who had gone to the Frazer river mines, had left on their return to California, having become dissatisfied with the country and the prospect; and that, of those who remained, by far the greater number were merely waiting to realize sufficient to defray their expenses back to their homes. It was still likely, however, that a considerable number would remain, both on Vancouver's Island and throughout the mining region of Frazer river, during the winter, if not longer; and I addressed myself to the accomplishment, in regard to them, of the objects of the mission with which I had been honored by the President of the United States.

The chief purpose of the special agency entrusted to me I understood to be, to infuse among the citizens of the United States, temporarily resident in the vicinity of Frazer river, a spirit of subordination to the colonial authorities, and of respect for the laws of Great Britain,—and, at the same time, by such representations to the governor of

Vancouver's Island as circumstances would suggest, to endeavor to obtain from that functionary the abrogation of the rigorous system of exactions theretofore pursued, and the adoption for the future of such a policy towards Americans as would not be inconsistent with their rights as the citizens of a friendly power, and would, furthermore, tend to promote among them feelings of kindness and good will towards the government and the subjects of Great Britain. Some such intervention by the United States was deemed necessary, for the reason that much exasperation was alleged to exist among those of our citizens, then making their way to the Frazer river mines, against the servants of the Hudson's Bay Company and the authorities of Vancouver's Island, in consequence of the onerous exactions to which they were said to have been subjected by those officials. The numerous complaints of such exactions that had already reached the government of the United States, as early as June last, were in that month brought to the notice of Lord Malmesbury by Mr. Dallas, our minister at London; and, from the declarations of his lordship in reply, of the favorable disposition of the British government, as well as from repeated assurances of Lord Napier, the British minister at Washington, to the same effect,—assurances of the sincerity of which no doubt was entertained,—the hope was indulged that the rigor of the exactions previously practiced would, upon proper representations of their injustice, be abated, and that the work of conciliation would be one of no difficult accomplishment.

In addition to these duties, my instructions contemplated that I should furnish your department with all needful and attainable information touching the newly discovered mines on Frazer river; the emigration of American citizens thereto; and other kindred subjects.

It is scarcely necessary to advert to the history of the Frazer river excitement; how, in April and May of last year, the people of California, and of Oregon and Washington Territories, were startled by rumors industriously circulated of fabulous gold discoveries on Frazer river; how, day after day, steamers and sailing vessels left the port of San Francisco for Victoria, crowded to excess: many of them carrying three times the number of passengers allowed by law; how thousands, who were then in prosperous circumstances in California, dazzled by the prospect of immediately acquiring immense wealth, abandoned their occupations, both professional and manual, and selling off their mining claims and other possessions at a great sacrifice, threw themselves into the mad crowd who were thronging with eager steps to the new gold fields. It is understood that twenty-three thousand men left the port of San Francisco for Frazer river, and that some eight thousand more went overland, from the northern counties of California, and from the Territories of Oregon and Washington, by way of the Dalles and Fort Kamloops.

Some estimate the number as much greater; but it is safe to assert that the emigration to Vancouver's Island and British Columbia during the gold excitement,—the bulk of it during the months of May, June, and July,—was not under thirty thousand, and may have reached thirty-three thousand.

The number remaining there at present probably does not exceed

three thousand. The causes which produced this general and rapid abandonment of the colonies, I shall presently endeavor to explain.

The first body of gold seekers found their way to Frazer river from Victoria in canoes, skiffs, and whale-boats, American steamers being at that time jealously excluded from the river. Numbers perished in these hazardous voyages; many were lost in the mazes of the archipelago that stretches from Discovery island to the edge of the Gulf of Georgia; and many more in attempting to cross that stormy and dangerous Gulf, dangerous even for strong and large steamers, from the peculiarity of its currents, and from other causes.

At length Mr. Douglas, governor of Vancouver's Island, and chief factor of the Hudson's Bay Company, was induced to permit, on certain conditions, and on the payment of a certain sum for each trip, the navigation of the river by American bottoms, reserving to himself the right to withdraw this permission whenever boats owned by British subjects could be provided for the transportation of passengers and freight. A number of steamers (the Sea Bird, the Surprise, the Umatilla, the Maria, the Enterprize, and others) immediately commenced running between Victoria and the different points on Frazer river, and by these means the emigrants were enabled to spread themselves over the gold regions on the river and its tributaries.

The failure of their quest has been already chronicled through the press. Some, it is true, without experience in mining operations, became disgusted, and left without giving the mines a fair trial; but the great majority of the emigrants were men who had gained a thorough knowledge of mining by years of experience in California, and whom no hardships or discomforts could deter from the prosecution of their purpose. These men have penetrated into every accessible portion of the gold fields, from the mouth of the river up to the Canoe country, down Thompson river, from Fort Kamloops to its mouth, and up Bridge river nearly to its source, and have prospected every spot where gold is supposed to exist.

It is true that gold has been found everywhere, but, for the most part, diffused in such small quantities as not to reward the labor of digging for it. Some idea may be formed of the unsatisfactory yield of the mines when it is considered that, notwithstanding the immense numbers of people precipitated upon Frazer river and the adjacent country, the entire yield from May till October, inclusive, did not much exceed half a million of dollars.

There are some five or six bars on the river, between Fort Hope and Fort Yale, (Santa Clara bar, Texas bar, Emory's bar, Hill's bar, and one or two others,) that yield well; and on Bridge river, and at the forks of Frazer and Thompson's rivers, good diggings have been found;—but in the whole region hitherto prospected, there are not eligible *placers* more than enough to give remunerative employment to about fifteen hundred miners.

What discoveries may be the result of future researches to the northward and eastward of the present gold region can be, for the present, only matter of vague speculation. Hitherto, no gold-bearing quartz ledge of any extent has been found, and but little coarse gold. The bulk of that washed out is exceedingly fine dust. Some considerable

portion is of the description known as scale gold. The coarse gold specimens that I have seen were found not in the main river but in its small tributaries. From the extreme fineness of the gold, it requires elaborate care in amalgamation, and the use of a large quantity of quicksilver.

In consequence of the hazards of the trip from Victoria to the various points on the river attainable by steamboats—the navigation of Frazer river being extremely difficult and perilous—the prices of freight were enormous. From Victoria to Fort Hope, situated on Frazer river, one hundred miles above its mouth, forty dollars per ton, and, as the river became low, and the difficulty and danger increased, fifty dollars per ton was charged. From Fort Hope to Fort Yale, a distance of sixteen miles, which could only be performed in canoes, the freight was twenty dollars per ton, and above that point, the river not being navigable even for canoes for upwards of two hundred miles, provisions were packed generally on men's backs to the various diggings and prospecting grounds above.

The cost of provisions being so greatly enhanced by the labor and expense of transportation, the scant yield that in most cases rewarded the labors of the miner, even when he found gold, except in the most favored spots, scarcely sufficed for his support; while thousands spent all the means they had brought with them from California in prospecting without any remuneration whatever from the soil.

It will be seen, from the above, that the deposits of gold in the Frazer river region do not offer any weighty inducement for emigration from any portion of the United States.

The country is still less attractive in an agricultural point of view. Towards the coast its features are rocks, mountains, and a dense growth of fir trees. The few patches of open land one meets with are fitter for pasturage than the plow. Around Fort Kamloops, on Thompson's river, there is a prairie of some extent, and among the mountains are minute strips of valley land, but these latter are generally so difficult of access as to be almost unavailable for farming purposes. There is at present no land under cultivation by white men in the colony, except, perhaps, a small strip in the immediate vicinity of Fort Kamloops. Eastward, towards the base of the Rocky Mountains, the country is more open, but the climate is more unfavorable to agricultural pursuits than on the coast.

All accounts concur in representing the climate as anything but pleasant. Mr. Dunn, a standard authority on that country, writes of it as follows:

"The climate is very variable, and the transitions are, though periodically regular, remarkably sudden, if not violent. During the spring, which lasts from April till June, the weather and face of the country are delightful. In June there are almost incessant rains, drifted furiously along by a strong south wind. In July and August the heat is intense, and the ground, previously saturated with moisture, produces myriads of annoying flies and insects. This heat and sunshine are succeeded in September by fogs of such palpable darkness that, until noon, it is seldom possible to distinguish objects at a longer distance than one hundred yards. In November the winter sets in

speedily, freeing the lakes and smaller rivers. The cold, however, is not so intense as might be imagined in such a country and climate."

From a British army officer, formerly in the service of the Hudson's Bay Company, a gentleman of great intelligence, who has traversed nearly the whole region comprised within the newly established colony of British Columbia, I learn that there is no part of the country that will ever justify farming operations of any magnitude or extent. A large portion of the country is covered with water, and the rest is broken, cut up by rocky mountain ridges, and covered with a dense growth of fir and other timber, valueless as lumber, and unavailable for spars, for the reason that there is no possibility of conveying it to the coast.

The climate of the southeastern portion of Vancouver's Island is, for the most part, pleasant and healthful, except for a few of the winter months, during which boisterous winds and cold rains prevail; but the soil is illy adapted for the growth of cereals.

On the eight or ten square miles of open land in the neighborhood of Victoria, (the capital and only town of the colony,) there are some well kept farms, and in the patches of land on different parts of the coast, covered with Indian villages, the potato is cultivated with success, and good farms might be established; but with the exception of twenty or twenty-five square miles, which comprise all the clear land of the island, the remainder, two hundred and seventy miles in length, by from forty to fifty broad, is a mass of rocks and mountains and sterile clay, covered with a dense growth of valueless fir and tangled underbrush. Even that portion of woodland which is accessible to the axe would not justify the labor or expense of clearing, as the soil is too barren to yield anything like healthy or remunerative crops. Neither colony, therefore, offered any inducements to our citizens, disappointed in their mining operations, to settle down in the country with the view of tilling the soil.

But there is no doubt that, independently of the unpromising character of mining and agricultural operations, the early and rapid abandonment of the colonies by our citizens was induced, in some measure, by the petty exactions and other annoyances to which they were subjected by the servants of the Hudson's Bay Company and the officers of the colonial government.

Immediately on my arrival at Victoria I took means to inform myself as to the various causes of complaint alleged to exist, with a view to making such representations to Governor Douglas as might lead to their removal. I found in force a number of restrictions on mining and commercial pursuits, that operated as very irksome burdens, not simply by reason of the amounts exacted in the shape of taxes and other imposts, but because they were known to be exacted without authority of law. I shall proceed to rotice these taxes in detail.

I have already said that, at an early stage of the Frazer river excitement, Governor Douglas gave permission for the navigation of the river by American steamers. From the following document, which is a copy of the original agreement, it would appear that the permission was given by him as factor of the Hudson's Bay Company, and not as governor of Vancouver's Island.

Copy of agreement.

The agents of the Hudson's Bay Company agree to license one or more steamers to ply from Victoria to and on Frazer river, on the following terms :

1. To receive and transport no goods to, on, or from Frazer river, except the goods of the Hudson's Bay Company, or such as they may permit to be shipped, and that for the transport of such goods that the freight do not exceed the following rates, viz :

Victoria to Langley, \$10 per ton of 2,000 pounds or 40 feet measurement.

Langley to Fort Hope, \$10 per ton of 2,000 pounds or 40 feet measurement.

Fort Hope to Fort Yale, \$5 per ton of 2,000 pounds.

Return rates to be in the same scale.

2. To carry no passengers to or on Frazer river who have not taken out a mining license and permit from the government of Vancouver's Island, and one month's advance thereon.

3. To pay head money to the Hudson's Bay Company at the rate of two dollars for each passenger proceeding into Frazer, or taking passage from Langley upwards ; a settlement to be made at the end of each trip, and an officer of the Hudson's Bay Company to be received on board without charge, to attend to such business if required by the Hudson's Bay Company.

4. That all vessels plying to or on the river be commanded and owned by British subjects.

5. That permits on said terms will be continued until expiry of the company's license to trade, in the month of May, 1859.

It will be perceived that this license is given by the agents of the Hudson's Bay Company to ply to and on Frazer river. By what right? Great Britain had the right to exclude our steamers from the waters of Frazer river; but if Great Britain did not choose to assert that right, how could the Hudson's Bay Company's servants claim to make conditions with our people, and charge toll for the privilege of entering? Admitting that they had the right of exclusive trade with the Indians, that did not give them control of the navigation of the river.

The conditions show, in a remarkably strong light, the grasping spirit that animated these officials. While other traders, British and American, were paying forty and fifty dollars per ton freight to Fort Hope, they exacted of the steamboat owners, as one of the conditions of opening the river, that they should carry the freight of the company for twenty dollars per ton, thus securing to themselves a large advantage over other merchants trading on the river.

Another very remarkable condition is that contained in *Article 2d* : Every person leaving Victoria for Frazer river, no matter what his business, was compelled to pay five dollars for a license to mine. Of course, under this regulation, the tax was extorted from a great

many of our citizens who never visited the river with any intention of mining.

I have seen a number of affidavits made by American citizens, setting forth the fact that they had visited Frazer river with no intention of mining; had never mined, and yet had been compelled to take out a mining license. The enforcement of the pre-payment, at Victoria, of this mining tax was abandoned a short time previous to my departure from the colony in November; but for a long time it was rigidly exacted, and a file of marines from the British vessel-of-war at the mouth of the river, was called into requisition, when it became necessary to enforce compliance on the part of a set of rebellious passengers.*

The third *article* requires the payment of two dollars head-money to the Hudson's Bay company, by every person entering the Frazer river country. I never could learn why this tax was collected, except that the Hudson's Bay company were the temporary possessors of the land, and they chose to exact this tribute from strangers on entering it.

The fourth *article* had neither truth nor substance, and was never intended to have any effect. The steamboat owners with whom the agreement was made were American citizens, the boats were American bottoms, sailing all the time under the American flag, and were so declared to be by their owners. The agents of the Hudson's Bay company said the article was a mere matter of form, and so it was inserted.

The following is a copy of the sufferance taken out by steamboats (for each trip) under the above agreement:

No. 580.—*General Sufferance.*

PORT VICTORIA, VANCOUVER'S ISLAND.

These are to certify to all whom it doth concern, that sufferance for this present voyage is granted on the conditions annexed to Captain Wright, to proceed on a voyage to Frazer river with steamer Enterprise and cargo, as per manifest, and that the said Captain Wright hath here entered and cleared his boat according to law.

Given under my hand at Victoria, V. I., this 18th day of October, 1858.

CHAS. A. ANGELO.

Deputy Collector.

* We would most earnestly impress on all persons about proceeding to the mines the necessity of obtaining licenses to mine from the proper officers at this port, as it will save them much time, annoyance, and may be serious trouble. Mr. Purser Welch, of the steamer Surprise, informs us that on his last trip up some fifty of the passengers, mostly Irishmen, refused to buy licenses, and expressed their determination to disregard the law in this respect. When off Point Roberts, just at the mouth of Frazer river, the Surprise was ordered alongside of H. B. Majesty's war steamer Satellite, boarded by her officers, and the fact of the contumacy of the refractory ascertained, when a file of marines was stationed on board and each passenger obliged to show his license under penalty of being put ashore. These prompt measures brought the rebellious to terms, and they were very glad to be allowed to purchase their licenses and proceed on their journey. We trust all persons arriving in the country will cheerfully obey the laws, as it is their duty, and because we are satisfied such obedience on their part will not only conduce to their own but the public good.—*Victoria (V. I.) Gazette of June 30, 1858.*

For each sufferance for a steamboat the sum of twelve dollars was exacted ; and for each sufferance for a canoe, and every other description of boat entering the river, the sum of six dollars. It will be seen that by a remarkable confusion of jurisdictions, this sufferance tax is collected by the collector of the port of Victoria, an officer of the colonial government.

Thus far, the taxes imposed were—

For mining licenses, renewable at the end of each month.....	\$5 00
Head-money from each person.....	2 00
Sufferance for a steamboat for each trip.....	12 00
Sufferance for each canoe and other boat.....	6 00

From canoes and other small boats passing up the river these imposts were collected in this wise: A hermaphrodite brig, named the Recovery, formerly owned by the Hudson's Bay Company, but afterwards put in commission and commanded by a lieutenant in the British navy, was stationed above the mouth of the river, and by her every boat passing up was hailed and ordered alongside.

If the passengers were so unfortunate as not to have means to pay mining license, head-money, and sufferance tax, their watches, pistols, knives, or other personal effects, were held in pledge for payment. In the absence of such personal effects, bags of flour, beans and coffee, hams, and other provisions were retained, and I have been assured that the deck of the brig was covered with those articles. It is but just to add that the officers immediately charged with the performance of this unpleasant service acted with all gentleness and humanity compatible with their orders, and that they endeavored, by every means in their power, to mitigate the rigor of these ameracements.

In addition to the taxes above enumerated, a duty of ten per cent. *ad valorem* was imposed on all goods imported into the Frazer river country. It is almost unnecessary to say that this duty is wholly unauthorized by any existing law. Latterly it was pretended that it was levied for the behoof of the government, but the fact that it was collected by Mr. Finlayson, the financial agent of the Hudson's Bay Company, and not by the collector of the port, in addition to other circumstances, would lead to the belief that it was imposed by the company and for their own benefit. A letter is in existence from Mr. Finlayson to Mr. G. B. Wright, a contractor on the Harrison Lillooett trail, in which that gentleman promises that the goods imported by Mr. Wright up Frazer river, for the subsistence and clothing of his men, shall not be charged with this duty of ten per cent. as long as the license of the company shall continue in existence, but that after its expiration they will have no control in the matter. If the duty had not been imposed by the company, they certainly would have had no power to remit it in Mr. Wright's case. I shall be enabled in a few days to furnish a certified copy of this letter.

The following is a copy of the permit granted on the payment of the ten per cent. duty:

Permit.

Permission is hereby given to the northwest boundary commission of the United States to import the following packages of merchandise into Frazer river:

Marks.—George B. Roberts for Alexander C. Anderson, collector.
Contents.—Two thousand pounds barley.

ROBERT FINLAYSON,
Hudson's Bay Company.

To the revenue officer of Frazer river.

WILLIAM JEFFERY.

VICTORIA, *V. I.*, September 2, 1858.

Appended to this report is an affidavit of W. G. Eason, esq., now resident of Victoria, setting forth the payment of the duty on the above mentioned shipment of barley, and the refusal of Mr. Finlayson to receipt for the same. I likewise append a statement from the books of G. A. Reynolds & Co., merchants in Victoria, showing the amount of duties paid by that firm for a portion of the month of September, 1858.

Having informed myself concerning these various imposts, I waited upon Governor Douglas, in accordance with your instructions, and represented the various causes of complaint urged by our citizens. From the friendly intentions expressed by the British government, and the earnest disposition manifested by Lord Napier, the British minister, to co-operate with the government of the United States in such mutual offices of kindness and conciliation as would soften any feeling of exasperation that might have previously existed on the part of our people then on Frazer river and Vancouver's Island, against the local authorities,—and from what I was led to believe was the tenor of the instructions sent to Governor Douglas, simultaneously with my departure for Frazer river,—I apprehended no difficulty in inducing, on the part of that functionary, such an abatement of the rigor of the previous exactions as would allay the existing discontent, and would secure, for the future, harmony and good feeling. I regret to state that neither the instructions sent out, nor the earnest and courteous remonstrances which I deemed it my duty to address to his excellency, against the injustice, the impolicy and illegality of those exactions, were efficacious in producing more than the partial and inconsiderable modification I have before mentioned.

Governor Douglas, it is true, expressed the most friendly dispositions; but when pressed upon the subject of an abatement of the restrictions on mining and trading operations, remarked that there was nothing to prevent the Americans going elsewhere if they were dissatisfied with their treatment in the two colonies.

As an apology for the imposition of those onerous taxes he alleged the necessity of protecting the miners from the Indians. The only protection ever afforded against the Indians was by the appointment of a few special constables, a force not likely to be very efficient in an

Indian war. It is needless to say that the miners were compelled to protect themselves. At first the Indians were extremely hostile, from causes which I shall hereafter allude to. The miners, being in a strange land, and unwilling to embroil themselves, forbore, for a long time, from resisting the outrages perpetrated by the savages; but their forbearance the Indians regarded as cowardice; murders were committed; day after day the headless trunks of murdered miners came floating down the river. Bands of men were then organized who went out to the rancherias, met the Indians and chastised them. They then made treaties with them, and peace prevailed ever after. Individual instances of indiscretion and hot blood there may have been among the Americans in these troubles; but the unanimous testimony of all parties, both English and American, goes to show that those engaged in the difficulties exhibited exemplary forbearance before they struck a blow. Since that time there has been no necessity for the employment of special constables in Indian warfare.

But the grievances of which our citizens complained were not confined to the exactions practiced upon them. Numerous complaints reached me, of outrages committed by the subordinate officers of the Hudson's Bay Company, of dishonest dealings by the Commissioner of Public Lands, and of flagrant bias, according as their prejudices tended, on the part of the courts. The probity of the judges in pecuniary matters was unimpeached, but it was evident in many cases that their national prejudices carried them far out of the path of justice. Indeed, it is not too much to say that the courts, from the peculiarity of their constitution and the eccentricity of their action, were the merest travesties of judicial tribunals. Their pure unsophisticated ignorance of law was only equalled by the vehement bigotry that characterized their proceedings in many cases.

Where circumstances permitted, I directed the complaints of our citizens to be sworn to; in some cases, where the abuses occurred in remote parts of the interior, this mode of authentication was impracticable. At the request of the aggrieved parties I lay some of these cases before you, with this report, for the action of the government.

Among them will be found one of a man who makes affidavit that he had declared his intentions to become a citizen of the United States; that he had built and stocked a store at Fort Langley; had hoisted the American flag on his house on the fourth of July in honor of his adopted country; was arrested some days afterwards for this offence, put in irons, brought down to Victoria, tried on a trumped-up charge of selling liquor to Indians, convicted, and thrown into prison, where he was kept for nearly two months, being fed on bread and water for a portion of the time. The affidavit and other papers are furnished herewith.

There will be found another case of an American citizen who was unmercifully beaten by an agent of the Hudson's Bay Company at Nanaimo, assisted by a number of half breeds, the agent being intoxicated at the time. The man beaten was Andrew McKenzie, the assaulting party was a man named Stewart, an agent of the Hudson's Bay Company and a colonial magistrate. McKenzie swore information against Stewart, but the court would not entertain the complaint

or issue process, for the reason that Nanaimo was out of its jurisdiction. The day previous, the same court had entertained a complaint against McKenzie, and had him arrested on a charge of uttering threatening language, the offence being alleged to have been committed at this very same place, Nanaimo, which next day the judge declared was out of his jurisdiction. On the first day, when the complaint was entertained, it was that of a British subject against an American. On the next day, when the complaint was not entertained, the case was of an American citizen against a British subject.

Another case will be found to be that of a ditch company at Santa Clara bar, on Frazer river, who had, with great labor and expense, constructed a ditch conveying water to their claim ; when, as they were about to reap the fruits of their enterprise, the commissioner of crown lands, who had been previously given an interest by another party, prevented them from using the water, and gave the privilege to the party with whom he himself was connected. Another, from a company on Texas bar, complains of a similar piece of knavery and oppression. Another memorial was received from Hills' bar, signed by one hundred miners, and complaining of similar outrages on the part of the same functionary.

Numberless complaints of this character poured in on me from day to day, more or less meritorious, but all of them proving a most grasping and avaricious spirit on the part of the petty authorities of the place, or else a studied determination to disgust the Americans with the country. These things continued up to the time of my departure ; and a few days before leaving Victoria, having been apprised of the existence of a very embittered feeling on the part of our citizens, engendered by these many acts of injustice, I deemed it my duty to issue an address to the Americans residing in Vancouver's Island and British Columbia, putting them in possession of the views of their government in regard to their rights and standing in those colonies ; admonishing them to commit no violation of law, and to be obedient to the authorities ; at the same time admitting the numerous abuses that existed, but pledging to them the intervention of their own government for the redress of their grievances and the protection of their rights. This address I subjoin from the *Victoria Gazette*, of November 13, 1858.

To the citizens of the United States in Vancouver's Island and British Columbia :

Having received from citizens of the United States mining and trading on Frazer river and in its vicinity, a number of letters complaining of acts of injustice and oppression at the hands of the colonial authorities, and being on the eve of my departure to lay my report before the government at Washington, I take this public method of apprising American citizens sojourning in Vancouver's Island and British Columbia of the views of our government in regard to their rights and standing in these colonies.

I need scarcely say that the government of the United States expects of its own citizens abroad a decent conformity with local regulations,

obedience to the laws of the countries they visit, and a proper show of respect for the authorities by whom those laws are administered. This is exacted of strangers visiting the different States of the Union, who are amenable to punishment for a violation of the laws of those States or of the United States, as are American citizens for infraction of the laws of such foreign countries as they may enter in the pursuit of pleasure or of business. Such of our citizens, therefore, as have taken up their temporary residence in British Columbia or Vancouver's Island are subject, like all other residents, to the laws of the colonies of Great Britain, and are liable, like all others, to the penalties meted out by those laws to persons properly convicted of their violation.

I am aware that an elaborate attempt to impress these facts upon my fellow-citizens in these colonies would be superfluous. Their sobriety of deportment, their decent observance of all the proprieties of life in the midst of privations and annoyances of no common degree, and their obedience to the law under very trying provocations to its infringement—although they may not have gained for them such liberal treatment as was due to that forbearance and good conduct—have nevertheless commanded the respect of the strangers among whom they are cast, and cannot fail to be subjects of pride and gratulation to their own government.

Considering the circumstances attending the recent settlement of these colonies, it was scarcely to be expected that a well regulated government could be at once built up out of the chaotic elements suddenly thrown together in such confusion. Much was to be pardoned to the inexperience of an executive hitherto dealing for the most part with savages, and possibly unprepared by previous training for the more refined exigencies imposed by governmental relations with a white population. Much of the cause of complaints that have arisen was to some extent excusable, because due to the unlicensed rudeness of the subordinate officers of the Hudson's Bay Company and the colonial government, who, by reason of their long isolation from civilized society and their habitual intercourse with Indians, had unlearned most of the finer traits of humanity and were scarcely accountable for a grossness of conduct that had become to them a second nature; and, lastly, much was to be excused in the ignorance and want of tone of courts organized out of such crude and unfit materials as those, the only ones that were at hand on the sudden influx of the strangers. In some instances, no doubt, these courts have fallen short of even the limited expectations justified by the peculiar circumstances of their construction and the strange constituents of which they were composed. But it is not to be doubted that the British government will, without unnecessary delay, provide remedies for the evils and abuses arising from this condition of things—evils and abuses affecting not alone the prosperity of its own subjects, but the rights of citizens of a foreign and friendly power.

The forbearance, in the mean time, of the citizens of the United States, their quiet observance of the laws under any aggressions on their rights of which they may have to complain, will not alone have its reward in the consciousness of having done credit to their country, a country whose institutions are based upon that all-pervading love of

order, and that spirit of obedience to the law which distinguishes its citizens, but it will, moreover, entitle them to the active intervention of their own government for the redress of their grievances and for the protection of their rights. That the government of the United States, upon proper cause being shown, after recourse shall have been had in vain to the tribunals, against acts of oppression or injustice, will so intervene for the redress and protection of its citizens in British Columbia and Vancouver's Island, I am authorized and instructed to give them the most emphatic assurance. If wrong be done them, let them appeal to the courts. It is to be hoped they will obtain justice; but should those tribunals, unfortunately, be too impotent, too ignorant, or too corrupt to administer the law with impartiality and firmness, our citizens may reckon with certainty upon the prompt and efficient interference of their own government in their behalf. The best guarantee I can furnish them of the certainty of such interposition will be found in the subjoined declaration by the honorable Lewis Cass, Secretary of State of the United States, in a recent despatch to our minister in Nicaragua, enunciating clearly and vigorously the views of our government in respect to the rights of our citizens visiting foreign countries:

"The United States believe it to be their duty, and they mean to execute it, to watch over the persons and property of their citizens visiting foreign countries, and to intervene for their protection when such action is justified by existing circumstances and by the law of nations. Wherever her citizens may go through the habitable globe, when they encounter injustice they may appeal to the government of their country, and the appeal will be examined into, with a view to such action on their behalf as it may be proper to take. It is impossible to define in advance and with precision those cases in which the national power may be exerted for their relief, or to what extent relief shall be afforded. Circumstances as they arise must prescribe the rule of action. In countries where well defined and established laws are in operation, and where their administration is committed to able and independent judges, cases will rarely occur where such intervention will be necessary. But these elements of confidence and security are not everywhere found; and where that is unfortunately the case, the United States are called upon to be more vigilant in watching over their citizens, and to interpose efficiently for their protection when they are subjected to tortuous proceedings by the direct action of the government, or by its indisposition, or inability to discharge its duties."

It is unnecessary for me to make any further or more pointed application of this declaration, to the circumstances of American citizens in these colonies. Their own intelligence and prudence will enable them so to guard their conduct that they shall never forfeit that provident and fatherly care and protection which it promises, and which the government of the United States has both the ability and the will to exercise over all its children, in whatever part of the world they may be.

JOHN NUGENT,
Special Agent of the United States.

VICTORIA, VANCOUVER'S ISLAND, Nov. 13, 1858.

From what has gone before, it will not be denied that my remarks concerning the executive were founded in justice; as to the courts, their partiality was almost inconceivable. The animus with which they dealt out law to American citizens will be best understood from a letter appended to this report from Captain William Webster, now in this city, from which it will be seen that the chief justice of the colony of Vancouver's Island, Mr. Cameron, once so far forgot himself on one occasion as to say in open court that the only further punishment he thought should be inflicted on a person named Munro, convicted of perjury, who had been in prison for three months, was "to send him to the other side," (Washington Territory,) "where all rogues and villains should be sent, where they belonged, and should remain."

Among the Hudson's Bay Company's people, there are some gentlemen of high character and respectability. Mr. McKay, Mr. McTavish, Mr. McLean, and the agent at Fort Yale, whose name I forget, have exhibited marked courtesy and kindness towards Americans; but that my strictures upon the generality of the subordinate officers, to whom they were intended to apply, were not too severe will be admitted, when I state on the authority of Colonel Snowden, a citizen of Yuba county, in California, that he learned from several Indian chiefs, that they and their people were led to believe by the representations of the Hudson's Bay Company's servants, that the Americans were coming there to rob them of their cattle, of their food, and their squaws; and were advised by those same evil minded individuals to commence a war of extermination against our citizens; and furthermore, when I state that one of the guns captured from the hands of an Indian in October last, in one of Colonel Wright's Indian fights in Washington Territory, was a British musket of the date of 1857, which arm could not have found its way into the heart of our Indian territory, except through the emissaries of the Hudson's Bay Company; and that numbers of similar weapons were furnished to the Indians in the war against our troops not the slightest doubt is entertained. My information in regard to this fact is derived from a number of army officers, fresh from the battle-fields of Washington Territory, and personally cognizant of the matter; among them, Lieutenant Morgan, now stationed at Old Point Comfort, Lieutenant Tyler, I believe on leave, and within a few hours' reach of this place, and Captain Fletcher, on leave, and within telegraphic communication in Virginia. I will further state that there is evidence now in the Department of State, that after a disastrous battle fought in Washington Territory, during the last year, with the Spokanes and other Indians, the mules, horses, accoutrements, and other property of the United States which fell into the hands of the savages, were subsequently purchased from them by the agents of the Hudson's Bay Company, at Colville, and other places; that this property bore the marks and brands of the United States, and was known to the purchasers to have been plundered by the Indians, who were then in a state of rebellion against our government.

But that they did not confine themselves simply to receiving this stolen property, but absolutely supplied the Indians then in the field against our troops with ammunition and arms, is abundantly proved

by the testimony of army officers and others. Mr. John Owen, special Indian agent to the Flathead nation, Washington Territory, writes from Colville valley, on the 11th of July, 1858, as follows: (I quote from the report of the Secretary of the Interior, pages 618, 619, 620.)

"I arrived at Fort Colville in company with the Hudson's Bay Company's 'brigade,' on the 4th instant. I met at Colville the Cœur d'Alene chief, with some ten others of the same tribe. They came well mounted, on United States horses and mules; they are offering the mules for sale; some were bought by the Hudson's Bay Company. I told the gentleman in charge that I had no orders to stop it, but I did not think it right to furnish a market for stolen horses to the enemy."

* * * * *

The Hudson's Bay Company's train, some two hundred head of horses, starts in a few days for Fort Hope, for the year's outfit. I think they are to bring some two thousand pounds of powder, with a proportionate quantity of ball. This, as a matter of course, will find its way into the hostile camp, or at least a large portion of it. The trade in ammunition might be stopped here, but as the gentleman in charge told me, we could not prevent the company from trading at Fort Fortynine, which is another post, some thirty miles above Colville, on the right bank of the river and across the line."

Mr. Nesmith, superintendent of Indian affairs for Oregon and Washington Territories, to whose notice these facts were brought, writes to the special agent as follows. His letter, dated August 2, 1858, is to be found on pages 623, 624 of the report of the Secretary of the Interior.

"You are also requested to warn the officer in charge of the Hudson's Bay Company's post at Colville to desist from encouraging the Indians in stealing and marauding by purchasing from them the property captured or stolen from the government or citizens of the United States. You will also warn him against supplying the Indians with arms and ammunition, and communicate such acts of the kind as may come to your knowledge to the commanding officer of the column now approaching Colville. If the officers of the Hudson's Bay Company have knowingly become the recipients of stolen property, they are as guilty as the thief who stole it, which, together with their furnishing arms and ammunition to murder our people, should stamp them with infamy and cause their expulsion from American soil. It is hoped that the military will take steps to prevent a repetition of the outrages complained of."

The subjoined extract from a letter published in the Washington Union of October 31, 1858, from Doctor F. Perkins, of Oregon, will furnish further corroboration of the above charges:

"We remained at Fort Colville four days, and during that time thirty of the Cœur d'Alenes, with their head chief, were occupying a room in the fort. It will be remembered that these were the very ones who had defeated Colonel Steptoe; and they had with them a great number of American 'U. S. D.' mules and horses, which were sold to the chief of the Hudson's Bay Company at Fort Colville, for a small nominal price; he thus furnishing a market for stolen

goods, knowing them to be such, and that they had been taken at Colonel Steptoe's defeat. While we were at Fort Colville, every night the Indians would have their scalp dance, with their drums beating and war-whoops sounding. They did exactly as they pleased there, and would go into the kitchen and take smut off of the kettles to black their faces, which is a well known sign of hostility, indicating war to the knife. In connexion with this subject, I will mention that the chief in charge at Fort Colville made the remark that if the United States government would not allow him to sell the Indians ammunition there, he would do it at Fort Forty-nine, which is three miles north of the line in the British possessions. *Heretofore there has been a very small amount of ammunition sent up from Fort Hope to Fort Colville for the winter; but this year it amounts to five hundred pounds of powder, nearly double the amount sent any previous year. Where the Indians have procured the ammunition with which they have fought Colonel Steptoe and the whites I do not pretend to say; but the fact that the Hudson's Bay Company have sent up so much more than usual this year, when they have no more call for it than before, is suggestive, and every man can draw his own deductions how this ammunition is to be used.*"

During my stay at Victoria, I was informed by the city marshal that a number of American citizens, Abraham Doran, William Johnson, William Harris, Wesley Cooper, Hulen Miles, and a negro named William Hurley, accused of various offences against the law, were about to be sent to trial without counsel. With the exception of the crown solicitor, (prosecuting attorney) the only members of the bar in the colony were American citizens, and these were not allowed to practice in the courts. I addressed a note to Governor Douglas, requesting him, under these circumstances, to interpose and cause counsel to be assigned to the accused from among the members of the American bar present, as the denial of counsel would operate as a great hardship and injustice. While the governor was holding the matter under advisement, the prisoners were tried, and with one exception, I believe, convicted. Afterwards I was informed by a note from his excellency that the application could not be granted, as the rules of the court forbade anybody practicing before it who was not a subject of the British crown. I regret to be obliged to characterize this as a mere subterfuge; that it was such will appear from the fact that the gentleman who then held the office of crown solicitor had been a member of the San Francisco bar for two years.

My correspondence with Governor Douglas on this question is furnished herewith.

From all these petty exactions and oppressions, these denials of justice and evidences of rampant prejudice, the conclusion is irresistible that whatever may have been the disposition of the British government, the feeling of the colonial officials and of the servants of the Hudson's Bay Company was aught but friendly towards our people. Their conduct was the less excusable, for the reason that the citizens of the United States visiting the colonies, comported themselves, throughout, with the most remarkable sobriety and decorum.; All the colonial officials, including Governor Douglas, many times expressed

their surprise at the utter absence of any riotous or disorderly spirit among the miners. Even breaches of the peace of the most trivial character were of very rare occurrence; and, by everybody, the warmest praises were volunteered on the invariably quiet and orderly conduct that was observed. I would here remark that from the officers of the navy stationed near Victoria, and from the English gentlemen residing on Vancouver's Island, the Americans received nought but courtesy, kindness, and attention, from first to last; and by none have I heard the acts of the Hudson's Bay Company's servants more strongly censured than by subjects of Great Britain who have long resided on the island, and who are cognizant of the many abuses practiced by the company and its agents.

If the unkind and unfriendly acts upon which I have commented above, originated from jealousy of the advent of the Americans, or from fear of their eventually laying claim to the country, such jealousy and such apprehensions were wholly gratuitous. The Americans, it is true, were in sufficient force any time within the first six months to make successful any movement on their part towards the seizure of the colonies, which the fears of the authorities may have suggested as possible; but they entered the country with no marauding propensities; and furthermore, setting aside their indisposition to disturb the peaceful and friendly relations subsisting between their own country and Great Britain, the two colonies of Vancouver's Island and British Columbia really offered no inducements sufficient to render them worthy of even a temporary struggle. It is true that, in all probability, both will eventually cease to be under European control. Their ultimate accession to the American possessions on the Pacific coast is scarcely problematical—but in the mean time their intrinsic value either of locality, soil, climate, or productions, does not warrant any effort on the part of the American government or the American people towards their immediate acquisition.

As national possessions these colonies are to us but of little value. As I have already stated, Vancouver's Island—two hundred and seventy miles long and forty to fifty miles broad—contains, as far as I could learn, not more than some twenty or twenty-five miles of open land, and that not of the first quality. It has one town, Victoria, very prettily situated, filled with a highly intelligent and enterprising American population, and destined to be a place of some consequence. But the chief value of the island consists of the harbor of Esquimalt, which has capacity for a whole navy, and where vessels can lie perfectly secure from every wind that blows. Soke harbor is small, but very secure. Around the Cowichin villages is an extensive plain of good land, and the coal beds of Nanaimo are of good quality. So much for Vancouver's Island. Further explorations of the interior of the island may in time lead to the discovery of more valuable resources, although this is not probable. British Columbia has little to recommend it, except the forests of spars contiguous to the coast. The town of Fort Langley, thirty-five miles from the mouth of Frazer river, contains about eighty inhabitants. Fort Hope, some sixty-five miles above, contains about two hundred inhabitants, and as the head of winter navigation will probably be the depot of winter supplies for

the miners above. Fort Yale, sixteen miles above Fort Hope, is a bustling town of some five or six hundred inhabitants. It is just below the point where the river ceases to be navigable even for canoes, and is a place of considerable trade. The river, even below Fort Yale, is full of rapids, eddies, and under currents, and its navigation is at all times attended with difficulty and danger. I do not regard the gold fields of the colony hitherto prospected as valuable. Gold will be found over the whole country; but it is not extravagant to say that every ounce hitherto taken out of the Frazer river gold diggings has cost much more than an ounce to obtain it, not to mention the immense number of lives lost in the whirlpools of that treacherous stream. As national possessions, then, with the exception of the harbor of Esquimalt, these colonies are, as I have stated, to us comparatively valueless. It is true that the gold fields of Frazer river, although they will cease to command the attention of our citizens, will attract emigrants from England; besides, a number of Americans will continue in mercantile pursuits in Victoria, and the great bulk of the mining population still on Frazer river is likewise American. I respectfully suggest in this connexion the necessity of appointing a consul to reside at Victoria, whose functions should extend over Vancouver's Island and British Columbia. The interests of our citizens in that quarter imperatively demand the presence of a commercial agent.

The gold excitement caused a number of small towns to spring up in Washington Territory, contiguous to Frazer river and the mines. South of Point Roberts and close to the 49th parallel, a town called Semiamo was laid out, on the little bay of that name, from which there is a road leading to Fort Langley, a distance of seventeen miles; and on Bellingham bay the towns of Sehome and Whatcom were established. From this latter point a trail was cut, with great labor and expense, to intersect the trail to Fort Hope. A number of the immigrants entered the country overland, having come by way of the Dalles of the Columbia, thence taking the trail to Fort Kamloops, and from that point proceeding down Thompson's river to the forks. I herewith present a map of the Frazer river country, with manuscript lines and notes, which will give a better idea of it than any of those published. I could not learn that any overland expedition from the States or Territories east of the Rocky mountains had reached that country previous to my departure.

During my stay in Victoria, a number of American citizens who had come down from Frazer river, utterly destitute, without food, clothing, or any prospect of employment, or means to leave the country, applied to me for relief. Being without authority to contract for sending them to their homes; but not deeming it consistent either with humanity or proper national pride to suffer them to starve in a foreign land, as they would have done had they remained on the island, I appealed to the liberality of the agents of the Pacific Mail Steamship Company, and those gentlemen, with most praiseworthy readiness, acceded to my request to convey a number of the most destitute to San Francisco, agreeing, at the same time, to depend upon the justice of Congress for remuneration. A memorandum of the number of destitute citizens sent home by the company's steamers, as well as a copy

of my correspondence with the company's agents, at San Francisco, will be found appended to this report. In this connexion I take great pleasure in mentioning the humanity and kindness of Captain Lubbock, of the steamer "Maria," and Captain Wright, of the "Enterprise," to numbers of destitute citizens who had no means to pay for a passage from the mines down to Victoria. A large number were taken down by those gentlemen without charge. Through the liberality of Mr. Garrison a number were likewise taken down from Victoria to San Francisco on the steamship "Cortes."

I have already noticed the importance to the British government of the harbor of Esquimalt, on the southern end of Vancouver's Island. That its value is beginning to be appreciated by that power is already shown by the recent concentration at that point of quite a formidable squadron, and by the preparations said to be in progress for the construction of forts and other means of defence. Simultaneously with these movements and, indeed, somewhat in advance of them, the Russian government has been, for some time, engaged in fortifying the mouth of the Amoor. For several months past vessels from above have been arriving at that point laden with heavy guns, powder, shot and shell, and other materials for the construction of fortifications. It is evident that both powers look upon these points as very valuable as naval stations, and as possibly of great importance in other points of view in the event of a European war. In this connexion I beg to be permitted to call attention to the fact that on our whole coast, north of San Francisco, there is no harbor affording a safe anchorage for vessels during the southerly gales that prevail in the winter months.

By the construction of a breakwater at Crescent City a very safe and commodious harbor can be obtained, and, considering the very great importance of a safe port on the coast, the expense of the necessary works would be but trivial. I need not say that the want of a secure harbor on their coast is a great check to the prosperity of the people of the northern counties of California, and that their numbers and the vast resources of that portion of the State entitle them to consideration at the hands of the general government. But among the islands stretching from the Strait of Rosario to the Canal de Haro there are a number of fine harbors, which, from their capacity and safety, leave us nothing to regret in having yielded Vancouver's Island. San Juan, an island fourteen or fifteen miles long by about seven miles wide, has two excellent harbors; and Lopez island, opposite and separated from it by a channel of not more than a mile wide, has another fine harbor, perfectly land-locked and safe at all times.

Both islands possess a fine soil, plenty of timber and of running water, abundance of pasture land, and the whole group is famous as a fishing station.

The present condition of this group of islands I shall briefly describe. They are claimed by Washington Territory as a part of Whatcom county; and, at the same time, are claimed by the officers of the British government as belonging to the possessions of that power on the Pacific. They have already been the subject of some controversy between the American and British commissioners for running the boundary line, and the matter has been referred by those gentlemen

to their respective governments. A few words will explain the nature of the dispute.

The treaty of June 15, 1846, stipulates as follows: Article 1. "From the point of the forty-ninth parallel of north latitude, where the boundary laid down in existing treaties and conventions between Great Britain and the United States terminates, the line of boundary between the territories of her Britannic Majesty and those of the United States shall be continued westward along the 49th parallel of north latitude to the middle of the channel which separates the continent from Vancouver's Island; and thence southerly through the middle of the said channel and of Fuca Straits to the Pacific ocean: Provided, however, that the navigation of the said channel and straits south of the forty-ninth parallel of north latitude remain free and open to both parties."

There are two channels between the continent and Vancouver's Island, both leading out into the Straits of Fuca. The Strait of Rosario, a narrow channel nearest to the mainland, and the Canal de Haro, which, besides being the beaten track, is much wider, has greater average depth of water, and is nearer to Vancouver's Island. It is claimed on the part of Great Britain that the Strait of Rosario, being the channel nearest to the mainland, is that contemplated by the treaty; but a very slight consideration of the circumstances under which the line was run, as well as of the wording of the article above quoted, will show that this position is wholly untenable. In the first place, the only reason why the boundary line was caused to deflect from the forty-ninth parallel before it reached the Pacific ocean was to avoid the southern end of Vancouver's Island, on which there was then a British settlement. The intentment of the article was merely to save to Great Britain the island of Vancouver, and consequently the nearest channel to Vancouver was undoubtedly that through the middle of which the treaty contemplated the line should run. Again, the islands bordering on the continent belong to the continent, unless otherwise stipulated; but there is no stipulation except as to Vancouver's Island; neither was there any reason existing at that time why there should be, as none of the islands in dispute were then occupied by subjects of Great Britain.

It does not, of course, become me in this place to enter into an elaborate argument of this question. My purpose is simply to call attention to the design apparently entertained by Great Britain, on the shallowest possible pretext, to deprive the people of the United States of possessions clearly theirs, and the importance of which to them, as well as to the government of the United States, can scarcely be over estimated.

I have the honor to be, with great respect, your obedient servant,
 JOHN NUGENT,
Special Agent of the United States.
 Hon. LEWIS CAES, *Secretary of State.*

VICTORIA, VANCOUVER'S ISLAND,

October 6, 1858.

The undersigned, special agent of the United States, has the honor to state to his excellency Governor Douglas that he is informed there

are six American citizens now in the prison of the fort awaiting trial on various charges ; that these persons are denied the benefit of counsel, for the reason that no member of the American bar is permitted to practice in the courts of this colony, and the only British subject who practices in the courts is the crown solicitor, whose duty it is to prosecute the accused ; that the prisoners are men ignorant of law, and therefore unable to present a proper defence ; and that, from these causes, the accused may suffer great hardship and injustice.

In view of the above facts, the undersigned begs that his excellency Governor Douglas will so far interpose, to promote the ends of justice, as to cause counsel to be assigned to the accused from among the members of the American bar resident in Victoria ; and further to provide that a similar course be observed in all such cases hereafter occurring, until the arrival of persons qualified, by reason of being British subjects, to practice in the courts.

The undersigned has the honor to be, &c., &c., &c., his excellency's obedient servant,

JOHN NUGENT,
Special Agent of the United States.

His Excellency Governor DOUGLAS.

VICTORIA, VANCOUVER'S ISLAND.

SIR: I am directed by his excellency the governor to acknowledge the receipt of your letter of the 6th instant, requesting his excellency's attention to the case of certain American citizens now in prison at this place on various charges, and who are deprived of the benefit of counsel, for the reason that no member of the American bar is permitted to practice in the courts of Vancouver's Island ; and further desiring that his excellency will so far interpose to promote the ends of justice as to cause counsel to be assigned to the accused from among the members of the American bar resident in Victoria, and to provide that a similar course be taken in all such cases hereafter.

I am also directed by his excellency to assure you of his desire to take into favorable consideration the proposition in your letter ; and at the same time, while admitting the hardship of the cases referred to, to state his opinion that the constitutional law of England does not invest him as governor with authority to alter or suspend the established rules of the law courts of the colony.

As this, however, is a question of great public importance, his excellency will submit it for the consideration of the law officers of the colony, and will communicate to Mr. Nugent their decision as soon as received.

I have the honor to be, sir, your obedient servant,

RICHARD GOLLEDGE,
Secretary.

JOHN NUGENT, Esq.,
Special Agent of the United States, &c., &c., &c.

GOVERNMENT HOUSE, VICTORIA,
Vancouver's Island, October 14, 1858.

SIR: With reference to the communication which I had the honor of addressing you by his excellency's instructions on the 8th instant, I am directed by the governor to transmit for your information copy of a communication received from the crown solicitor of Vancouver's Island, showing that, in his opinion, no power is vested in the executive to cause counsel from among the members of the American bar resident in Victoria to be assigned to parties accused of offences and awaiting trial in the courts of Vancouver's Island.

The governor further desires me to state to you that the courts have no objection whatever to allow persons in custody to receive assistance from members of the American bar, or others who may be willing to aid them in preparing for their defence.

I have the honor to be, sir, your obedient servant,
 RICHARD GOLLEDGE,
Secretary.

JOHN NUGENT, Esq.,
Special Agent for the United States.

Copy of a letter from George Pearkes, esq., crown solicitor and attorney, to Governor Douglas, dated Saturday morning, October 10, 1858.

SIR: The undersigned has the honor to acknowledge the receipt of your communication of the 8th instant, accompanied by a communication of Mr. Nugent, special agent of the United States.

To the question propounded by your excellency as to the constitutional power of the executive to cause counsel from among the members of the American bar resident at Victoria to persons accused of crime and awaiting trial in the courts of this colony, it is submitted:

First. The organization of the judiciary is separate and distinct from that of the executive; and the appointment of any officer to discharge functions pertaining to the judiciary not specified by law would be an encroachment on the part of the executive.

Second. Barristers, attorneys, and solicitors, are made by law officers of the judiciary, having rights and privileges incident to such office, and amenable and punishable for misconduct after call and during enrollment.

Third. By act of parliament and order in council organizing the judiciary of this colony it is expressly provided that the chief justice shall make rules for the admission of barristers, attorneys, and solicitors to practice in the respective courts of this colony.

The order referred to gives no authority, even to the judiciary, to make assignment of counsel to the members of the bar of a foreign State, but expressly prohibits the appearance of any other person to act in that capacity, save those so enumerated.

Until recently, prisoners charged with felony were not allowed to make their defence by counsel, and this not until the 6th and 7th of

William the Fourth, when by special statute they were permitted counsel learned in the law, or by attorneys in the courts where attorneys practice as counsel.

It therefore follows that no power to assign counsel is vested in the executive.

I have the honor to be your excellency's obedient servant,
GEORGE PEARKES,
Crown Solicitor and Attorney.

HOTEL DE FRANCE,
Victoria, Vancouver's Island, November 3, 1858.

SIR: Indisposition and absence from town have caused your note of the 14th ultimo to remain unanswered until now.

I am therein advised that your excellency finds it impossible to interpose, in accordance with the request contained in my note of the 6th ultimo, to cause counsel to be assigned from among the American members of the bar, resident in the colony, to American citizens accused of crime, in the absence of British subjects authorized to practice in the colonial courts. A former note had assured me of your disposition to accord to the request your most favorable consideration. That the subject would receive such favorable consideration I had every reason to expect. The plain dictates of humanity and justice should forbid that the lives and liberties of people of any nationality should be jeopardized, simply out of deference to the forms of a crude forensic etiquette. Still more was I justified in hoping that these forms would be set aside, when their observance would operate most harshly and unjustly against citizens of a power on terms of peace and amity with the nation whose government you serve, and at a time when the bonds of friendship which happily subsist between the two countries are being strengthened and drawn closer day by day.

I need not say that I am greatly disappointed at the conclusion at which your excellency has arrived. The consequence of that conclusion will be that American citizens accused of crime in these colonies will be, as some have already been, forced to trial without benefit of counsel, ignorant as they may be of the law, unadvised as to their rights, unacquainted with the rules of evidence or the regulations of the courts, and denied all those facilities for proving their innocence that in every well regulated government are afforded to those unfortunates who find themselves in antagonism to the law. But it is not for its grave injustice, nor for the manifold hardships it will work, that such a course is alone to be deplored. It will naturally prove a pregnant and oft-recurring source of irritation and ill feeling to the Americans residing in these colonies. It will force them to contrast the treatment of their countrymen here with the treatment of British subjects in the United States. They know that there, no foreigner, however friendless or lowly he may be, how atrocious soever the crime of which he stands accused, is put upon his trial without counsel to represent him; and that when he is too poor to command the services of the

bar, the court takes merciful cognizance of his condition and assigns counsel for his defence. It is needless to say that a comparison so little to the advantage of British colonial justice and its administration will have a tendency to defeat what I am not permitted to doubt is the wish of the British government, as it is that of the government of the United States, to promote and foster feelings of cordial good will between American citizens sojourning in these colonies and the subjects of her Britannic Majesty.

I regret that your excellency should have taxed the legal erudition of the crown solicitor in reference to what is, after all a matter of simple justice. It needed not that functionary's learned opinion to prove that the judiciary should be independent of the executive. But in a colony where, if I may without invidiousness say so, there is observable so extraordinary a confusion of jurisdictions, in its fiscal, executive and judicial departments, and where there have been so many departures from law, involving a most material sacrifice of the rights of American citizens, it was not unreasonable to indulge the hope that your excellency, to prevent great wrong and injustice, and for the conservation of harmony and kind feeling, would have favored not a violation of law, but an immaterial deviation from the rules of an imperfectly organized court.

Disappointed in this hope, I have but to request that your excellency will afford me facilities for obtaining the names of those American citizens accused of crime in the colonies of Vancouver's Island and British Columbia, within the last six months, who have been forced to trial without counsel to represent them, and have been convicted, that I may be enabled to present their case to the government of the United States for its action.

I have the honor to be your excellency's obedient servant,

JOHN NUGENT,

Special Agent of the United States.

His Excellency Governor DOUGLAS.

P. S.—The last two notes received from your excellency were signed by your secretary, I presume, through inadvertence. I beg to call your attention to this mistake, in order to prevent its recurrence.

VICTORIA, VANCOUVER'S ISLAND,
November 9, 1858.

SIR: I am desired by his excellency the governor to acknowledge the receipt of your letter of the 3d instant, and to express his regret at your late indisposition and his sincere hope that your health is now restored.

His excellency wishes to impress upon you that, with every wish to accommodate American citizens resident in this colony and in British Columbia, and to extend to them every privilege consistent with British law, as is proved by the very liberal treatment which they have hitherto received, he finds himself constrained to adhere to the conclusion already communicated to you respecting the assigning of

counsel from among the American members of the bar resident in the colony to American citizens accused of crime.

If there were no other reasons for limiting the practice in the courts of law to members of the bar who are British subjects, duly qualified for the privilege in conformity with the general custom of all nations, than that the act which established the judiciary of the colony has determined the special classes of lawyers who are competent to practice at the bar, his excellency conceives the question is thereby placed beyond the control of the executive.

For your more particular information upon this point I have the honor to enclose a copy of such of the rules of court as bear upon the subject.

The power to admit persons eligible to practice in terms of these rules is given to the chief justice.

His excellency is convinced that you labor under misapprehension if you suppose, as one portion of your letter would seem to indicate, that the lives and liberties of people of any nationality are put in jeopardy out of deference to what you are pleased to term a crude forensic etiquette; or that American citizens accused of crime in these colonies will be or have already been forced to trial without benefit of counsel and unadvised as to their rights.

As you justly observe, the plain dictates of humanity forbid, and the humane and liberal practice of the courts very carefully prevent, the possibility of any such deplorable consequences.

With the view of satisfying you upon this matter, his excellency would explain: That all persons accused of crimes are tried by jury trial; that the magistrates who are commissioned to preside at such trials are gentlemen well known in the community for the respectability and humanity of their characters, and whose sentences are certainly not tinctured with severity; that on all criminal trials the accused are allowed every reasonable facility for proving their innocence; that they are not only permitted but invited to have professional counsel or private friends of their own selection, without regard to nationality, to advise and assist them before and at their trials; that the only restriction of professional counsel's privileges is that of *pleading*; that this prohibition extends to British subjects equally with the citizens and subjects of all other nationalities, by reason of there not being, at the present moment, legal practitioners in the colonies eligible to practice in the courts—an inconvenience only temporary; and that for the same reason the crown, as prosecutor, is debarred the privilege of counsel to plead against the accused.

You will thus see that American citizens accused of crimes are treated exactly similar to the subjects of her Majesty.

The gravity of those allegations made by you caused his excellency so much concern that, in addition to other investigations to ascertain the truth, he applied to one of the magistrates before spoken of for exact information, and received an answer, of which a copy is enclosed for your information.

His excellency feels confident that on your being informed of this liberal and humane practice of the criminal courts, rendered necessary by the present unlooked-for circumstances of the country as an unavoidable temporary expedient, you will readily perceive and admit

that the contrast which you have drawn between the treatment received by American citizens residing in these colonies and that received by British subjects in the United States is not grounded on facts.

His excellency is constrained to give a positive denial to your allegation made in another part of your letter, that "there have been many departures from law, involving a most material sacrifice of the interests of American citizens."

No such irregularities have occurred, nor is his excellency aware of any such consequences as you assert having accrued from a departure from law in any case; and he is at a loss to conceive to what you can allude by this general assertion.

His excellency is confident that you cannot allude to the effects of decisions of the tribunal in civil cases; for it appears that of the total number of suitors in the "Supreme Court of Civil Justice" during the last few months, a large majority has been American citizens—a conclusive proof that their interests have not been sacrificed by "many departures from law," or they would not continue to invoke justice before this tribunal.

In answer to your request that his excellency will afford you facilities for obtaining the names of those American citizens accused of crime in the colonies of Vancouver's Island and British Columbia within the last six months, who have been forced to trial without counsel to represent them, and have been convicted, I am to inform you that it will at all times afford his excellency great pleasure to supply you with all useful information in his power, and to afford you every possible facility for collecting such whenever accessible; but that, as no such cases as those mentioned in the category you have framed have occurred in this or in the sister colony, his excellency finds it impossible to comply with your present request.

On this part of the subject his excellency desires to add that no distinction of nationality has been made in the cases of persons tried for crimes committed against the laws of Great Britain in these colonies, and that all such persons have been fairly and impartially tried, with all the advantages extended to British subjects, and for this reason he fears it would be impossible to ascertain with any accuracy the nationality of all the persons who have been "accused of crime and convicted," and assuredly no return of American citizens "who have been forced to trial without counsel, &c.," could be obtained, for the reason that no such cases occurred; a fact of which the details of the criminal practice already herein given will satisfy you.

His excellency desires me to inform you that the two last letters which he had the honor to address to you by his private secretary, alluded to in the postscript to your letter, were not signed by the secretary by inadvertence, as you presume; that the usual medium of official communications is the colonial secretary, and in the absence of that functionary the governor's private secretary was deputed to sign the letters referred to in behalf of his excellency; a course which was not adopted from any disrespect to you, but in conformity with diplomatic usage, and in which sense his excellency begs you will accept

these and any future official communications which he may have the honor of making to you in that manner.

I have the honor to be, sir, your most obedient servant,
RICHARD GOLLEDGE,
Secretary.

Rules of the supreme court of civil justice of the colony of Vancouver's Island, respecting the admission of practitioners.

There shall be enrolled in the court, to practice therein as barristers, such persons only as shall have been admitted as barristers in England or Ireland, or advocates of the court of sessions of Scotland, or to the degree of doctor of civil law at the University of Oxford, Cambridge, or Dublin.

There shall be enrolled in the court, to practice therein as solicitors, such persons only as have been admitted to practice as attorneys or solicitors of any of the courts of record at Westminster or Dublin, or being proctors admitted to practice in any ecclesiastical court in England or Ireland, or being writers to the signet in Scotland.

Nothing contained in any of the rules shall be construed to prevent suitors from appearing and acting for themselves, if they shall so think fit.

Copy of a letter from Augustus Pemberton, Esq., Justice of the Peace, Commissioner of Police, &c., to Governor Douglas.

VICTORIA, VANCOUVER'S ISLAND,
 November 8, 1858.

SIR: In reply to your excellency's communication of this morning, referring to certain allegations contained in a letter addressed to you by John Nugent, esq., special agent for the United States of America, in which he requests that your excellency will afford him facilities for obtaining the names of those American citizens accused of crime in the colonies of Vancouver's Island and British Columbia within the last six months, who have been forced to trial without counsel to represent them, and have been convicted, I beg leave to state that I am not aware of any such case, the uniform practice being to allow all criminals, of whatever nation, the assistance of friends and advisers, whether legal or otherwise, to aid them in their defence.

The only instance in which a crown solicitor has been employed to conduct a prosecution in court is that of William Hurley, a colored man, not an American citizen, who was indicted for shooting at George P. Heap, with intent to do some grievous bodily harm. Heap is an American citizen. Hurley was assisted by a Mr. Davis, who was allowed to visit the accused in prison, and to stand by his side in court, to challenge the jury, and to advise what cross-ques-

tions should be put to the witnesses, and what defence should be taken. But as Mr. Davis was not competent to plead in court, the crown solicitor refrained from addressing the jury.

The court which presided on this occasion was held under a special commission issued by your excellency to three justices of the peace, of whom I was one.

For my own part, I most solemnly declare that I make no distinction, nor any inquiry, as to the nationality of persons charged with committing offences against the laws. I deal with each case according to its own peculiar merits; and the maintenance of peace and order during a time of great excitement has been a subject of congratulation; in proof of which I take the following extract from the "Victoria Gazette," November 2, 1858, the editor of which is an American:

"The order that has been maintained here, under circumstances of grave forebodings, aggravated by the numerical weakness of those directly pledged to sustain the law, cannot but have a decided tendency to inspire that confidence upon which is dependent the character of our future population."

I have the honor to remain your excellency's most obedient humble servant,

AUGUSTUS PEMBERTON, J. P.

His Excellency JAMES DOUGLAS, Esq.,
Governor of Vancouver's Island and British Columbia.

NOTE.—I would remark that the facts here denied are notorious to everybody in Victoria. While Governor Douglas was still holding my application under advisement, the men were put upon their trial, convicted, with one exception, and sentenced, some of them to transportation, notwithstanding that Mr. Labatt, an American citizen, arose in court and requested a postponement of the trials even for a day until the will of the governor could be known. What Governor Douglas dwells upon as an act of liberality, permitting counsel or friends to confer with the accused in prison, was simply their legal right; but the truth is, they did not enjoy even this right. They had no legal advice whatever.

JOHN NUGENT.

Mr. Nugent to Governor Douglas.

HOTEL DE FRANCE, VICTORIA,
Vancouver's Island, November 12, 1858.

SIR: In my note of third of the present month, I had the honor to call your attention to what I conceived to be a mistake made by your secretary in signing your two communications of the 8th and 13th ultimo, respectively, with his own name. In a verbal conversation had with your excellency on the day on which your last note was dated, I intimated that I could not receive communications on matters connected with my agency through the medium of your private secretary, that gentleman being to me officially unknown. Since then, I have received another note dated November 9, 1858, doubtless dictated by your excellency, but signed in the same way as the two preceding.

Not having been made aware by my government of any circumstance giving your excellency the prerogative of corresponding with me at second hand, and only through a third party, I regret to inform you that I cannot take notice of the contents of your communication of the 9th instant; and further, that all written correspondence must cease between us with this note. I am urged to this step by a sense of duty alone; and although I would be undoubtedly justified by the rules of that diplomatic etiquette to which you appeal, in returning your last communication, I refrain from so doing, because it is my desire to avoid all appearance of harshness or unkindness; because I am willing to attribute your excellency's course to a want of conversancy with such matters, rather than to uncivil intention; and because, in obedience to the spirit of my instructions, I am anxious to maintain, to the end, the amicable relations that have hitherto subsisted between your excellency and myself.

Lest my official duties should not afford me leisure to call for the purpose of paying my respects to your excellency previous to my departure, I avail myself of this occasion to bid you farewell.

I have the honor to be your obedient servant,

JOHN NUGENT,
Special Agent of the United States.

His Excellency Governor DOUGLAS.

SAN FRANCISCO, *December 22, 1858.*

SIR: Enclosed please find copy of a letter addressed to us by Captain W. L. Dall, which furnishes statement of the number of passengers transported from Victoria to San Francisco, by your request.

We trust you may succeed in getting a bill through Congress which will remunerate the company for the service.

We are, respectfully,

FORBES & BABCOCK, *Agents.*

HON. JOHN NUGENT,

United States Commissioner, &c., &c., Washington.

SAN FRANCISCO, *December 22, 1858.*

GENTLEMEN: The Hon. John Nugent, United States Commissioner to British Columbia, went passenger with me from San Francisco to Victoria, and on the passage up suggested that he might find some Americans in destitute circumstances, wishing to return to their homes in the United States, and desired permission to furnish passage to such as were destitute, that they might be able to reach San Francisco; at the same time he wished it understood that he had no authority from the federal government to make any contract for transportation, but promised he would notify the State Department of what had been done by the Pacific Mail Steamship Company in the way of transportation, and exert his influence to have the service properly paid for.

As I had your consent to make some arrangement of this kind, I

told him his written request to our agent at Victoria, or myself, would entitle the bearer to a steerage passage. Neither Mr. Nugent or myself ever supposed there would be occasion to extend this privilege to many.

The Northerner, in October, brought down ten passengers, and the Panama, November 2, seventy-four, and Panama, November 22, forty-one, making in all one hundred and twenty-five passengers furnished transportation, which, at twenty dollars each, the usual price, amounts to twenty-five hundred dollars.

The persons thus relieved were in very destitute circumstances, and, really, had not some way been found to enable them to return to their homes, I do not know where they would have found food or shelter.

Yours, respectfully,

WILLIAM L. DALL.

Messrs. FORBES & BABCOCK,

Agents Pacific Mail Steamship Company.

I certify that the number of passengers above mentioned, one hundred and twenty-five, were brought down from Victoria to San Francisco, free of charge, on board the Pacific Mail Steamship Company's steamers, at my request; and that the usual rate of steerage passage, during October and November, 1858, was twenty dollars.

JNO. NUGENT,

Special Agent of the United States.

WASHINGTON, D. C., January 24, 1858.

REPORT
OF
THE ATTORNEY GENERAL,

MADE

In compliance with a resolution of the Senate, relative to the title conveyed to the United States by the city of San Francisco, to lots No. 5 and 6 in hospital square, in that city.

FEBRUARY 18, 1859.—Ordered to lie on the table and be printed.

ATTORNEY GENERAL'S OFFICE,
February 17, 1859.

SIR: In compliance with the resolution of the Senate, passed on the 30th day of March last, directing me to examine the title conveyed to the United States by the city of San Francisco, on the 11th December, 1852, I have the honor to report that:

I transmitted to the District Attorney of the United States at San Francisco all the papers within my reach, accompanied with instructions to examine the whole subject fully, and make report as soon as possible. By the last steamer from California I have received his report, which I herewith send you, to be laid before the Senate.

The report being somewhat voluminous, I have analysed it so as to arrange under each point of inquiry, the facts which specially pertain to it.

I have no personal knowledge of this title, nor are there in my office any papers or records from which I am able to pronounce an opinion about it. My only sources of information upon the subject are these documents which I am now transmitting.

Yours very truly,

J. S. BLACK.

Hon. J. C. BRECKINRIDGE,
Vice President of the United States and President of the Senate.

Synopsis of report made by the District Attorney of the United States.

"1. *Resolved*, That the Attorney General be directed to make a careful examination of the nature and validity of the title conveyed to

the United States by the city of San Francisco, on the 11th December, 1852, and report to the Senate:

"First, whether any and what defects exist in said title?"

Upon this point Mr. Della Torre does not express an opinion, but states facts showing that all the title which the city possessed was, in the year 1851, divested by a sheriff's sale at the suit of Samuel A. Morrison, and that on the 23d of October, 1851, the sheriff's deed was made in pursuance of such sale. This deed being prior to the quit claim given to the United States, it follows that the title conveyed on the 11th December, 1852, was not good.

2. "Second. Whether the parties to whom the lots five and six, in the hospital square at San Francisco, were conveyed by sheriff's deed in 1851, have valid title to said lots under said conveyances, and are competent now to transfer valid title to the United States?"

Upon this point Mr. Della Torre gives no opinion, but he shows by his history of the title that the city, prior to the sheriff's sale, had a clear right to all but the water lot portion of lots five and six in fee; that the city also had a lease for ninety-nine years for the water lot portion; that all of this interest is vested in Holladay and others who claim under the sheriff's deed; that they also hold a release from the State, of the reversion in the water lot portion of lot number "five," and that they have an agreement from the holders of the outstanding reversion in the water lot portion of number "six" by which they can procure a conveyance, if the United States will make the purchase.

3. "Third. What is the present value of said lots five and six, and whether said lots are indispensable for the use of the hospital?"

Upon these points Mr. Della Torre expresses no opinion, but refers to the affidavits of A. A. Selover, Richard H. Sinton, and Henry A. Cobb, real estate agents or brokers in San Francisco, each of whom declares that the lots numbers "five" and "six" are worth \$15,000 apiece. Mr. Della Torre also refers to the statement of Benjamin F. Washington, collector of the port, who says that one auctioneer whom he consulted, valued them at \$12,500 apiece, and another valued them at \$3,500 apiece. The latter, the collector thinks, is the true valuation.

Upon the other point, the collector says that the lots are not indispensable to the use of the hospital, but that they would add to its conveniences, and preserve the healthy breezes of the locality by keeping an open space.

4. "Fourth. Whether there are any outstanding claims of title to any other part of said hospital square?"

He knows of none, but has heard of "Colton grants," which are considered as worthless.

5. "Fifth. Where the claimants of said lots resided, or whether they had notice of the purchase by the government, and knew of the erection of the hospital, or made objection thereto?"

Mr. Della Torre says: The claimants resided in San Francisco, and have done so for several years. They knew of the purchase by the government. They made no objection to the erection of the hospital, but the building is not on any part of their claim. They did object, however, to the enclosure of lots number five and six by the government, and applied for an injunction against the United States marshal and steward of the hospital, which was granted.

DOCUMENT NO. 1

Diagram showing the position of the United States Marine Hospital on Rincon Point, San Francisco, Cal.

[See original for diagram.]

DOCUMENT No. 2.

Decree of Board of Land Commissioners, confirming the claim of the city of San Francisco to the pueblo lands.

THE CITY OF SAN FRANCISCO vs. THE UNITED STATES.

In this case, on hearing the proofs and allegations, it is adjudged by the commission that the claim of the petitioner is valid, and it is therefore decreed that the same be confirmed. The land of which confirmation is made is that known by the name of the pueblo lands of San Francisco, and is bounded as follows: Beginning at the little cove to the east of the fort and running across the beach, so as to leave the fort and Casa Mateo to the north; thence running along the beach to Point Lobos on its southern part; thence a straight line to the summit of the Devisadero, continuing said line to the east as far as the "Punta del Rincon," including the "Canutales" and "El Gentil," the said line will terminate within the bay of the mission of Dolores, the estuary of which will form a natural boundary between the municipal jurisdiction of that pueblo and the said mission of Dolores; thence along the shore of the bay of San Francisco, as it existed in the year 1834, to the point of beginning. For more particular description, reference to be had to the copy of the order from Governor José Figueroa to General Mariano G. Vallejo, dated Monterey, November 4, 1834, marked Exhibit No. 18 to the deposition of M. G. Vallejo, taken in No. 280, H. J. T., and now on file among the papers in the case.

ALPHEUS FELCH,
R. AUGUSTUS THOMPSON,
S. B. FARWELL,
Commissioners.

Endorsed: No. 280, city of San Francisco. Decree of confirmation. Filed in office December 21, 1854.—Geo. Fisher, Secretary. Recorded in vol. 3 Decis., p. 447.

UNITED STATES SURVEYOR GENERAL'S OFFICE,
San Francisco, California.

I, J. W. Mandeville, United States surveyor general for California, and as such having in my custody the papers of the late board of land commissioners to ascertain and settle the private land claims in Cali-

fornia, do hereby certify the foregoing to be a full, true, and correct copy of the decree of confirmation of said commissioners in case No. 280 in the docket of said board, together with the endorsements thereon, as the same is on file in my office.

Given under my hand and official seal this nineteenth day of November, 1857.

J. W. MANDEVILLE,
United States Surveyor General.

DOCUMENT No. 3.

Certified copy of the final decree of the United States district court, confirming the decree of the land commission.

At a stated term of the district court of the United States of America for the northern district of California, held at the court room in the city of San Francisco, on Monday, the thirteenth day of March, in the year of our Lord one thousand eight hundred and fifty-seven :

Present: The Hon. OGDEN HOFFMAN, *District Judge.*

THE UNITED STATES *vs.* MAYOR AND COMMON COUNCIL CITY OF SAN FRANCISCO.—D. C. 427, L. C. 280.

The Attorney General of the United States having given notice that appeal will not be prosecuted in this cause, and a stipulation to that effect having been entered into by the United States Attorney—

On motion of the district attorney, it is ordered, adjudged, and decreed that the appeal taken by the United States from the decision of the United States land commission in this case be dismissed, and that claimants have leave to proceed under the decree of said commission, heretofore rendered in their favor, as under final decree.

OGDEN HOFFMAN,
U. S. District Judge.

Endorsed: Filed March 30, 1857.

JOHN A. MONROE, *Clerk,*
By W. H. CHEVERS, *Deputy.*

I, John A. Monroe, clerk of the district court of the United States for the northern district of California, do hereby certify the foregoing to be a full, true, and correct copy of the original now on file and remaining of record in my office.

In testimony whereof, I have hereunto set my hand and affixed the [L. S.] seal of the said court, the 19th day of November, A. D. 1857.

JOHN A. MONROE, *Clerk.*
By Y. G. GRAYMES, *Deputy.*

DOCUMENT No. 4.

In place of certificate of Surveyor General.

The certificate of the United States Surveyor General I cannot get at present, as he is unwilling to give his certificate to the obvious fact that this land is within the limits of the tract of land confirmed to the city, and the reason given is that there has not been a final survey. If it is deemed necessary, I will get such certificate after the final survey has been made, and then forward it on.

S. W. HOLLADAY.

DOCUMENT No. 5.

Certified copy of judgment.

STATE OF CALIFORNIA.

In the district court of the fourth judicial district in and for the county of San Francisco.

No. 558.—SAMUEL A. MORRISON *vs.* THE CITY OF SAN FRANCISCO.

This day came the said parties, by their attorneys, and the court having heard the evidence, (sitting as a jury, the jury being waived by the parties,) finds for the plaintiff in the sum of \$2,477 42:

Wherefore, it is ordered and adjudged by the court now here, that the said plaintiff, Samuel A. Morrison, do have and recover of and from the said defendant, the city of San Francisco, the said sum of twenty-four hundred and seventy-seven dollars and forty-two cents, and also all costs herein expended; and that the said plaintiff do have his lien on the "California street wharf," situated at the foot of California street, in the city of San Francisco, and upon the piling, capping, plankings erections and constructions thereon, for the payment of said judgment and costs.

Judgment rendered May 19, 1851.

Signed May 23, 1851.

JOEL ROBINSON, *D. J.*

I hereby certify the foregoing to be a true copy of the judgment rendered in the above entitled cause, as recorded in Liber A of Judgments, page 243, No. 558.

Attest my hand and seal of said district court, this 19th day of [23.] November, A. D. 1857.

WM. DUER, *Clerk.*

W. BARTLETT, *Deputy Clerk.*

DOCUMENT No. 6.

Copy of deed from Jno. C. Hays, sheriff, to James Blair, conveying lot No. 6.

JOHN C. HAYS, SHERIFF, TO JAMES BLAIR.

This indenture, made this twenty-third day of October, 1851, between John C. Hays, as sheriff of the county of San Francisco, of the first part, and James Blair, of the city and county of San Francisco, and State of California, of the second part; whereas, heretofore, to wit, on the nineteenth day of May, A. D. 1851, in the district court of the 4th judicial district, one Samuel A. Morrison did recover a judgment against the city of San Francisco for the sum of twenty-four hundred and seventy-seven dollars and forty cents, and costs, and the accruing costs in said suit, I did, by virtue of an alias execution, tested the 30th day of August, 1851, seize and take in execution all the right, title, and interest of said city in and to the following described property, to wit: That fifty vara lot commencing at the southeasterly intersection of Folsom and Front streets; thence running southeastwardly on Front street fifty varas; thence northeastwardly parallel to Folsom street fifty varas; thence northwestwardly fifty varas to Folsom street; thence along the line of Folsom street fifty varas to the point of beginning. Also, that other piece or parcel of land being a fifty vara lot, commencing at a point fifty varas southeastwardly from the southwesterly section of Folsom and Spear streets; thence running southwestwardly parallel to Folsom street fifty varas; thence southeastwardly parallel to Front street fifty varas; thence fifty varas to Spear street; thence along the line of Spear street northwestwardly fifty varas to the point of beginning. And whereas I, the said John C. Hays, as sheriff as aforesaid, did advertise the same according to law, to be sold at the court-house in the city of San Francisco, on the twenty-third day of October, A. D. 1851, at twelve o'clock in the forenoon, at which time and place I did also offer the same at public sale and outcry, and the said James Blair then and there having bid for the said land and premises the sum of seven hundred and ten dollars, and he then and there being the highest bidder therefor, I did strike off the same to him, and he then and there became the purchaser thereof. Now this indenture witnesseth, that I, the said John C. Hays, as sheriff of the county of San Francisco, and by virtue of the power in me vested, and of the execution to me directed, and for and in consideration of the sum of seven hundred and ten dollars to me in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained, sold, and conveyed, and do by these presents grant, bargain, sell, and convey unto the said James Blair, and to his heirs and assigns forever, the said described land and premises, unto the said James Blair, his heirs and assigns forever, as fully and absolutely as I, the said John C. Hays, as sheriff as aforesaid, may or can lawfully sell or convey the same. In witness whereof, I, the said John C. Hays, sheriff as aforesaid,

have hereunto set my hand and seal the day and year above written. The words "and also a decree for the foreclosure and sale of certain premises in said order and decree particularly described, to wit," erased before signing.

[SEAL.]

JOHN C. HAYS,
Sheriff.

Signed, sealed, and delivered in the presence of—
THOMAS P. JOHNSON.

STATE OF CALIFORNIA,
County of San Francisco.

On this 24th day of October, A. D., 1851, before me, the county clerk for said county, personally appeared John C. Hays, known to me to be the person described in and who executed the foregoing and within instrument of writing, and who acknowledged to me that he executed the same freely and voluntarily for the uses and purposes therein set forth. Witness my hand and the seal of my office the day and year above.

[SEAL.]

JNO. E. ADDISON,
County Clerk.

The preceding is a true copy of the original, recorded at the request of James Blair November 1, 1851, at 1 o'clock, p. m.

JOHN A. MCGLYNN,
County Recorder.

I, G. W. Beckh, county recorder in and for the city and county of San Francisco, do hereby certify that the foregoing is a true, complete, and perfect copy of an original record now in my office, as will appear by reference to "Liber 9 of Deeds, page 33."

Witness my hand and official seal, this 18th day of November, A. D. 1857:

G. W. BECKH,
County Recorder,
Per H. MAILES,
Deputy.

DOCUMENT No. 7.

James Blair to C. W. Gunnell.

This indenture, made the second day of January, in the year one thousand eight hundred and fifty-two, between James Blair, of the city of San Francisco, State of California, of the first part, and Charles W. Gunnell, of the same place, of the second part, witnesseth: that the said party of the first part for and in consideration of the sum of eight hundred dollars, lawful money of the United States of America, to him in hand paid by the said party of the second part, at or before the en sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has remised, released, and quit-claimed, and

by these presents does remise, release, and quit-claim unto the said party of the second part, and to his heirs and assigns forever, one undivided half of the following described property, to wit: that fifty vara lot, commencing at the southwesterly intersection of Folsom and Front streets; thence running southwesterly on Folsom street fifty varas; thence southeastwardly parallel to Front street fifty varas; thence northwestwardly fifty varas to Front street; thence northwestwardly fifty varas to the point of beginning; said property having been conveyed to said Blair by John C. Hays, as recorded in the book of deeds of said county, liber 9, page 34; also, one undivided one-half of the following described property, to wit: that fifty vara lot, commencing at the southeasterly intersection of Folsom and Front streets; thence running southeasterly on Front street fifty varas; thence northeastwardly parallel to Folsom street fifty varas; thence northwestwardly fifty varas to Folsom street; thence along the line of Folsom street fifty varas to the point of beginning; also, one undivided one-half of the following property, to wit: commencing at a point fifty varas southeastwardly from the southwesterly intersection of Folsom and Spear streets; thence running southwesterly parallel to Folsom street fifty varas; thence southeastwardly parallel to Front street fifty varas; thence fifty varas to Spear street; thence along the line of Spear street northwestwardly fifty varas to the point of beginning, being property conveyed by John C. Hays to James Blair, recorded in book of deeds, liber 9, page 33: Together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof; and also, all the estate, right, title, interest, of him in said property, possession, claim, and demand, whatsoever, as well in law as in equity, of the said party of the first part, of, in, or to, the above described premises, and every part and parcel thereof, with the appurtenances, to have and to hold all and singular the above mentioned and described premises, together with the appurtenances, unto the said party of the second part, his heirs and assigns forever.

In witness whereof the said party of the first part has hereunto set his hand and seal the day and year first above written.

JAMES BLAIR. [L. s.]

Sealed and delivered in the presence of—

CHARLES McC. DELANY.

STATE OF CALIFORNIA, }
County of San Francisco, } ss.

On this second day of January, A. D. 1852, personally appeared before me, a notary public in and for said county, James Blair, esq., known to me to be the same person described in, whose name is subscribed to, and who executed the within conveyance, and acknowledged to me that he executed the same freely and voluntarily, for the uses and purposes therein expressed. Witness my hand and official seal.

CHARLES McC. DELANY, [L. s.]

Notary Public.

The preceding is a true copy of the original, recorded at request of C. W. Gunnell January 10, 1852, at 10 o'clock a. m.

JOHN A. McGLYNN,
County Recorder.

I, G. W. Beckh, county recorder in and for the city and county of San Francisco, do hereby certify the foregoing to be a true, complete, and perfect copy of an original record now in my office, as will appear by reference to "liber 8 of deeds, page 367."

Witness my hand and seal of office, this 17th day of November, A. [L. s.] D. 1857.

G. W. BECKH,
County Recorder.

DOCUMENT No. 8.

John C. Hays, sheriff to J. G. Ames and S. W. Holladay.

This indenture, made this twenty-third day of October, A. D. 1851, between John C. Hays, as sheriff of the county of San Francisco, of the first part, and J. G. Ames and S. W. Holladay, of the city and county of San Francisco, and State of California, of the second part. Whereas heretofore, to wit, on the nineteenth day of May, A. D. 1851, in the district court of the fourth judicial district, one Samuel A. Morrison did recover a judgment against the city of San Francisco for the sum of twenty-four hundred and seventy-seven dollars and forty cents, and costs, and the accruing costs in said suit, I did, by virtue of an alias execution, issued out of and under the seal of said court, tested the 30th day of August, 1851, seize and take in execution all the right, title, and interest of said city, in and to the following described property, to wit: That certain fifty vara lot, commencing fifty varas southwardly from the southeasterly intersection of Folsom and Front streets; thence running northeastwardly, parallel to Folsom street, fifty varas; thence southeastwardly, parallel to Front street, fifty varas; thence southwestwardly fifty varas to Front street; thence northwestwardly to the place of beginning fifty varas: And whereas I, the said John C. Hays, as sheriff as aforesaid, did advertise the same, according to law, to be sold at the court-house in the city of San Francisco, on the twenty-third day of October, A. D. 1851, at twelve o'clock in the forenoon, at which time and place I did also offer the same at public sale and outcry; and the said J. G. Ames and Holladay then and there having then and there bid for the said land and premises the sum of one hundred and fifty dollars, and he then and there being the highest bidder therefor, I did strike off the same to him, and he then and there became the purchaser thereof. Now this indenture witnesseth that I, the said John C. Hays, as sheriff of the county of San Francisco, and by virtue of the power in me vested, and of the execution to me directed, and for and in consideration of the sum of o

hundred and fifty dollars to me in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained, sold, and conveyed, and do, by these presents, grant, bargain, sell, and convey unto the said Ames and Holladay, and to his heirs and assigns forever, the said described land and premises, with the appurtenances, unto the said Ames and Holladay heirs and assigns forever, as fully and absolutely as I, the said John C. Hays, as sheriff as aforesaid, may or can lawfully sell or convey the same. In witness whereof, I, the said John C. Hays, sheriff as aforesaid, have hereunto set my hand and seal, the day and year above written. The words, "and also a decree for the foreclosure and sale of certain premises in said order and decree particularly described, to wit," erased before signing.

JOHN C. HAYS, *Sheriff*. [L. s.]

Signed, sealed, and delivered in presence of—

THOMAS P. JOHNSON.

STATE OF CALIFORNIA, *County of San Francisco*.

On the 24th day of October, A. D. 1851, before me, the county clerk for said county, personally appeared John C. Hays, known to me to be the person described in, and who executed the foregoing and within instrument of writing, who acknowledged to me that he executed the same freely and voluntarily, for the uses and purposes therein set forth. Witness my hand and the seal of my office the day and year above.

[L. s.]

JOHN E. ADDISON,
County Clerk.

The preceding is a true copy of the original, recorded at the request of S. W. Holladay, October 24, 1851, at half-past 3 o'clock p. m.

JOHN A. McGLYNN,
County Recorder.

I, G. W. Beckh, county recorder in and for the city and county of San Francisco, do hereby certify the foregoing to be a full, complete, true, and perfect copy of an original record now in my office, as will appear by reference to liber 9, of deeds, page 2.

Witness my hand and official seal this 19th day of November, A. [L. s.] D. 1857.

G. W. BECKH,
County Recorder,
Per H. MAILS, *Deputy*.

DOCUMENT No. 9.

John G. Ames to Dennis S. Perkins.

This indenture, made the sixteenth day of September, in the year of our Lord one thousand eight hundred and fifty-three, between John G. Ames, of the city of San Francisco, and State of California, of the 1st part, and Dennis S. Perkins, of the same place, of the second

part, witnesseth : That the said party of the first part, for and in consideration of the sum of fifteen hundred dollars, lawful money of the United States of America, to him in hand paid by the said party of the second part, at or before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged, hath remised, released, and quit-claimed, and by these presents doth remise, release, and quit-claim unto the said party of the second part, and to his heirs and assigns forever, all his right, title, and claim whatsoever, in all that certain lot of ground lying, being, and situate in the city of San Francisco bounded and described as follows : Commencing on the east side of Front (now Main) street, fifty varas south from the southeast corner of Folsom and Front streets ; thence, southwardly, along the easterly side of Front street fifty varas ; thence at right angles eastwardly, fifty varas ; thence at right angles northwardly, fifty varas ; thence at right angles westwardly, fifty varas to the point of beginning. The part of the above described lot hereby conveyed being the undivided two-thirds thereof, together with all and singular, the tenements, hereditaments, and appurtenances thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof ; and also all the estate, right, title, interest, property, possession, claim, and demand whatsoever, as well in law as in equity, of the said party of the first part, of, in, or to the above described premises, and every part and parcel thereof, with the appurtenances. To have and to hold, all and singular the above mentioned and described premises, together with the appurtenances, unto the said party of the second part, his heirs and assigns forever.

In witness whereof, the said party of the first part hath hereunto set his hand and seal, the day and year first above written.

JOHN G. AMES. [L. S.]

Sealed and delivered in the presence of—

W. C. PARKER.

STATE OF CALIFORNIA, }
County of San Francisco, } ss.

On this sixteenth day of September, A. D. 1853, before me, W. C. Parker, a notary public duly appointed and commissioned under the great seal of the State of California, authorized by law to take acknowledgments, dwelling in the city of San Francisco, county aforesaid, came John G. Ames, to me known to be the individual described in and who executed the within instrument, and acknowledged that he executed the same for the purposes therein mentioned, of his own free act and deed, freely and voluntarily.

[L. S.] In witness whereof, I have hereunto set my hand and affixed my official seal, the day and year above written.

W. C. PARKER,
Notary Public.

Recorded in the county recorder's office, county of San Francisco, in liber 33 of deeds, page 79, November 3, 1853, at 2 p. m.

JAMES GRANT,
County Recorder.

A true copy of an original re-recorded at request of S. W. Holladay, November 19, 1857, at 25 minutes past 12 m.

G. W. BECKH,
County Recorder,
Per H. MAILS, *Deputy.*

I, G. W. Beckh, county recorder in and for the city and county of San Francisco, do hereby certify that the foregoing is a full, true, complete, and perfect copy of an original record now in my office, as will appear by reference to "Liber 73 of deeds, page 222."

Witness my hand and official seal.

[L. s.]

G. W. BECKH,
County Recorder,
Per H. MAILS, *Deputy.*

SAN FRANCISCO, *November* 19, 1857.

DOCUMENT NO. 10.

Copy of an Ordinance dated April 10, 1852, authorizing the Mayor to convey six lots to the United States.

CLERK'S OFFICE, BOARD OF SUPERVISORS,
San Francisco, November 19, 1857.

Ordinance No. 280.]

For conveying certain lots to the government of the United States :

The people of the city of San Francisco do ordain as follows : That his honor the mayor be directed to convey on their behalf all their right, title, and interest to certain six fifty vara lots bounded and described as follows :

" On the east by Spear street, on the south by Harrison street, on the west by Front street, and north by the beach ; the whole comprehended within an area of one hundred varas by one hundred and fifty varas.

J. P. HAVEN,
President Board of Aldermen.
JAS. DE LONG,
President of the Board of Assistant Aldermen.

SAN FRANCISCO, *December* 10, 1852.

Approved :

C. J. BRENHAM,
Mayor.

MAYOR'S OFFICE, *December 9, 1852.*

I hereby certify the foregoing to be a true copy of an original ordinance now on file in this office.

DANIEL S. ROBERTS,
Clerk.

I, Milo Calkin, clerk of the board of supervisors of the city and county of San Francisco, and as such having in my official custody the records of the late city government, do hereby certify that the foregoing is a true copy of ordinance No. 280, "For conveying certain lots to the government of the United States," as the same appears of record in this office.

Given under my hand this 19th day of November, 1857.

MILO CALKIN,
Clerk.

DOCUMENT No. 11.

City of San Francisco, by C. J. Brenham, "Mayor," to United States of America.

Whereas by ordinance No. 280 of the common council of the city of San Francisco, it was ordained as follows: "The people of the city of San Francisco do ordain as follows: That his honor the mayor be directed to convey, on their behalf, to the United States, all their right, title, and interest in and to certain six fifty vara lots, bounded and described as follows: On the east by Spear street; on the south by Harrison street; on the west by Front street; and on the north by the beach, the whole comprehended within an area of one hundred varas, by one hundred and fifty varas." Now, therefore, this deed, made and entered into this 11th day of December, eighteen hundred and fifty-two, by and between the city of San Francisco, by Charles J. Brenham, the mayor thereof, party of the first part, and the United States of America, party of the second part, witnesseth, that for and in consideration of the premises and of the sum of one dollar, to the party of the first part in hand paid by the party of the second part, the receipt of which is hereby acknowledged, the said party of the first part doth, by these presents, grant, convey, and quit-claim unto the said party of the second part, all the right, title, interest, claim, and demand, legal or equitable, in possession, remainder, or reversion of the said party of the first part, in and to the premises aforesaid, and every part thereof, which premises are situate and being within the corporate limits of said city, and are bounded and described as set forth in said ordinance, to have and to hold the said premises, with all the privileges and appurtenances thereunto belonging unto the said party of the second part, forever.

In witness whereof, the said Charles J. Brenham, mayor of said

city, on behalf of said city, hath hereunto set his hand, and caused the official seal of said city to be hereunto affixed the day and year aforesaid.

C. J. BRENHAM, *Mayor*. [SEAL.]

I hereby certify that the copy of ordinance No. 280, included within the foregoing deed, is a true copy of an original ordinance returned by the mayor to the common council with his approval, December 10, 1852.

EDWARD TOBY,
Clerk of the Common Council.

SAN FRANCISCO, *December 13, 1852.*

STATE OF CALIFORNIA, }
County of San Francisco, } ss.

On this 14th day of December, 1852, personally appeared before me, Frederick A. Sawyer, a notary public for said county, Charles J. Brenham, mayor of the city of San Francisco, and Edward Toby, clerk of the common council of said city, to me known to be the individuals described in and who executed the several instruments above to which their names are subscribed, and acknowledged to me that they executed the same freely and voluntarily, and for the purposes therein mentioned.

In testimony whereof I have hereunto set my hand and seal of office, the day and year last above written.

F. A. SAWYER, [L. s.]
Notary Public.

The preceding is a true copy of the original recorded at the request of T. B. King, December 14, 1852, 12 o'clock, m.

THOS. B. RUSSUM,
County Recorder.

I, G. W. Beckh, county recorder in and for the city and county of San Francisco, do hereby certify that the foregoing is a true, complete, full, and perfect copy of an original record now in my office, as will appear by reference to "Liber 19 of deeds, page 101."

Witness my hand and official seal.

G. W. BECKH, [L. s.]
County Recorder,

Per A. MAILS, *Deputy.*

SAN FRANCISCO, *November 19, 1857.*

DOCUMENT No. 12.

Certified copy of judgment in ejectment.

STATE OF CALIFORNIA.

District court of the twelfth judicial district in and for the county of San Francisco.

SAMUEL W. HALLADAY, CHARLES R. SAUNDERS, and DENNIS S. PERKINS, plaintiffs, vs. GEORGE LEVRS and MARY LEVRS, sued by the name of JOHN SMITH and AUGUSTA WILSON, defendants.

Judgment on verdict.

This cause came on regularly for trial. The said parties appeared by their attorneys. A jury of twelve persons was regularly empannelled and sworn to try said cause. Witnesses on the part of plaintiffs and defendants were sworn and examined. After hearing evidence, the arguments of counsel, and instructions of the court, the jury retired to consider their verdict, and subsequently returned into court, and being called answered to their names, and say they find a verdict for the plaintiffs:

Wherefore, by virtue of the law, and by reason of the premises aforesaid, it is ordered, adjudged, and decreed, that said plaintiffs have and recover from said defendants the sum of one hundred and twenty-two dollars and seventy-five cents, (\$122 75;) said plaintiffs' costs and disbursements incurred in this action.

And it is further ordered, adjudged, and decreed, that said plaintiffs have and recover from said defendants possession of a certain portion of the following described fifty vara lot, situate in the city and county of San Francisco, bounded and described as follows: Commencing on the easterly line of Main street, 137 feet 6 inches southeasterly from the southeasterly corner of Main and Folsom streets; running thence southeasterly along the said line of Main street, 137 feet 6 inches; thence northeasterly at right angles to Main street, 137 feet 6 inches; thence northwesterly parallel with Main street, 137 feet 6 inches; thence southwesterly at right angles to Main street, 137 feet 6 inches to the line of Main street, the place of beginning; said portion of said fifth vara lot being described as the southerly portion thereof, known by the following description: "Commencing at the southwest corner of said fifty vara lot; thence northerly along Main street, fifty (50) feet; thence at right angles easterly, 100 feet; thence at right angles southerly, fifty (50) feet, to the southern line of said fifty vara lot; thence at right angles westerly, 100 feet, to the place of beginning;" and that the said plaintiffs have their writ of possession therefor.

Decree rendered December 26, 1855.

A true copy of the decree rendered.

Attest, &c.

WM. DUER, *Clerk.*

WM. R. SATTERLEE, *Deputy Clerk.*

DOCUMENT No. 13.

Certificate of Hon. Edward Stanley as to title of the Claimants.

LAW OFFICE OF STANLEY & HARPES,
San Francisco, November 19, 1857.

To whom it may concern :

I hereby certify, that in the month of December, 1855, I was engaged as an attorney for the defendants in the trial of an action of ejectment in the twelfth district court of the county of San Francisco, wherein Dennis S. Perkins, Samuel W. Halladay, and Charles R. Saunders were plaintiffs.

The suit was brought to recover possession of a part of the fifty vara lot, on Rincon Point, lying on the easterly side of Main or Front street, and fifty vara southerly of Folsom Street.

On the trial of this suit, it became necessary for the plaintiffs to establish a title to the land in themselves, which the plaintiffs succeeded in doing against vigorous defence, interposed by myself and associate counsel. The result was a final judgment for the plaintiffs. The plaintiffs deraigned their title to the land from the city of San Francisco.

EDW. STANLEY.

DOCUMENT No. 14.

Copy of the order of the President of the United States to the United States Marshal.

The President of the United States of America to the marshal of the northern district of California, or other officer acting as marshal, greeting :

Whereas it appears that sundry persons have taken possession of or made settlements on lands ceded to the United States by the republic of Mexico, which lands belong to the tract on which the United States marine hospital at San Francisco has been erected, and are appurtenant thereto, of which the following is a description, viz : bounded on the east by Spear street, on the south by Harrison street, on the west by Front street, and on the north by the beach, which lands have not been sold, ceded, or leased by the United States, and to which no claim has been recognised by them : You are hereby directed to remove all such persons as may have taken possession of or made settlements on said lands within the boundaries herein described, and for so doing, this shall be your warrant.

Given under my hand at Washington, in the District of Columbia, this tenth day of December, one thousand eight hundred and fifty-five.

FRANKLIN PIERCE.

UNITED STATES MARSHAL'S OFFICE,
and for the Northern District of California. }

I hereby certify the foregoing to be a true copy of an original document now in my possession, and delivered to me amongst the other papers pertaining to this office by my predecessor, James Y. McDuffie, upon the commencement of my official duties as United States marshal of said district.

Witness my hand, at the city of San Francisco, this — day of November, 1857.

P. L. SOLOMON,
United States Marshal.

DOCUMENT No. 15.

Copy of a letter from the United States district attorney to the marshal on the subject of the order from the President.

UNITED STATES DISTRICT ATTORNEY'S OFFICE,
San Francisco, November 24, 1856.

SIR: I have examined the act of Congress of 1807, entitled "An act to prevent settlements being made on lands ceded to the United States until authorized by law," and inform you that it will be my duty to commence criminal proceedings against such trespassers on the lot of the marine hospital as shall be found on it at the expiration of three months from official notice to quit. The penalty is \$100 and imprisonment not exceeding six months. Be pleased to report to me the names of those who fail to remove in compliance with your notice.

Very respectfully, yours,

WILLIAM BLANDING,
United States District Attorney.

J. Y. McDUFFIE, Esq.,
United States Marshal.

UNITED STATES MARSHAL'S OFFICE,
and for the Northern District of California. }

I hereby certify the foregoing to be a true copy of an original document now in my possession, and delivered to me amongst the other papers pertaining to this office by my predecessor, James Y. McDuffie, upon the commencement of my official duties as United States marshal of said district. Witness my hand, at the city of San Francisco, this 19th day of November, 1857.

PERRIN L. SOLOMON,
United States Marshal.

Papers in support of the claim of S. W. Holladay and others to two lots in the United States marine hospital tract, at San Francisco, California.

Schedule of documents annexed to the claim of Charles W. Gunnell and others against the United States of America, showing the title of the claimants to two 50-vara lots situated on Rincon Point, within the block bounded by Spear, Harrison, and Front streets, and by the beach of the bay of San Francisco, in the city of San Francisco; which two lots are designated by the numbers 5 and 6, and which are also marked "Ames lot" and "Blair & Gunnell lot" on the accompanying diagram, which is marked Document No. 1:

Document No. 1 is the diagram above referred to, showing the position of the premises.

Document No. 2 is a certified copy of the decree of the board of the United States land commissioners, confirming the claim of the city of San Francisco to the lands within her corporate limits.

Document No. 3 is a certified copy of the final decree of the district court of the United States for the northern district of the State of California, affirming the said decree of the land commission, which is a final confirmation to the city of her claim to all the lands within her corporate limits.

Document No. 4 is a certificate of the United States surveyor general that the United States marine hospital lots mentioned on the diagram are all embraced within said decree of confirmation.

Document No. 5 is a certified copy of a judgment rendered in the district court of the fourth judicial district in the case of Samuel A. Morrison *vs.* The City of San Francisco, dated May 19, 1851, under which the claimants derive title to their lots, respectively.

Document No. 6 is a record copy, duly certified, of a deed dated October 3, 1851, from John C. Hays, sheriff of the county of San Francisco, to James Blair, conveying (amongst other property) the lot on said diagram marked "No. 6, Blair & Gunnell," by virtue of an execution issued upon said judgment of Morrison against the city.

Document No. 7 is a record copy, duly certified, of a deed dated January 22, 1852, from James Blair to Charles W. Gunnell, conveying (amongst other property) one undivided half of lot No. 6, also marked "Blair & Gunnell lot."

Document No. 8 is a record copy, duly certified, of a deed dated October 23, 1851, from John C. Hays, sheriff of the county of San Francisco, to John G. Ames and S. W. Holladay, conveying said Ames lot No. 5, under said execution of Samuel A. Morrison *vs.* The City of San Francisco.

Document No. 9 is a record copy, duly certified, of a deed from John G. Ames to Dennis S. Perkins, of all his right, title, and interest in said "Ames" lot, dated September 16, 1853.

Document No. 10 is a certified copy of an ordinance (No. 280) of the city of San Francisco, dated April 10, 1852, authorizing the mayor to convey to the United States six 50-vara lots therein mentioned, which includes the two lots in question.

Document No. 11 is a record copy of a deed, duly certified in pur-

nuance of said ordinance, from C. J. Brenham, mayor of the city, purporting to convey the six lots mentioned in said diagram, also described in said ordinance, to the United States. Deed dated December 11, 1852.

Document No. 12 is a certified copy of a judgment for the plaintiffs in an ejectment suit, brought by D. S. Perkins and others, to recover the possession of said "Ames lot" No. 5.

Document No. 13 is a certificate, signed by the Hon. Edward Stanley, (late of North Carolina,) that said action involved the whole question of title to said lot, and established the title in the plaintiffs.

Document No. 14 is a certified copy of a warrant signed by President Pierce, directed to the marshal of the northern district of the State of California, commanding a removal of all persons from said hospital lots.

Document No. 15 is a copy of a letter from the United States district attorney to the marshal on the subject of said order from the President.

S. W. HOLLADAY,
For himself and O. S. Perkins and Gunnell & Blair.

A BILL for the relief of S. W. Holladay and others.

Be it enacted by the Senate and House of Representatives of the United States of America, as follows:

1. That the Secretary of the Treasury be, and is hereby, directed to ascertain the value of two lots in the marine hospital tract conveyed to the United States by the city of San Francisco on 11th December, 1852, which had been previously conveyed on 23d October, 1851—one to J. G. Ames, and the other to James Blair—and to pay to the persons holding those previous grants the amounts which shall appear to be the value of their respective interests, provided that the same shall not exceed the sum of ten thousand dollars for each of said lots.

Letter of Attorney General to District Attorney, San Francisco, California.

ATTORNEY GENERAL'S OFFICE,
May 4, 1858.

SIR: I enclose you herewith a printed copy of certain resolutions passed by the Senate, requiring me to investigate the title to the lots on which the hospital is built. This is the Globe's report, but it is authentic and full, except that the resolutions, as finally passed, embraced the amendment proposed by Mr. Collamer.

You will give this subject your careful attention, and as soon as you can satisfy yourself of the whole truth you will report to me an

accurate history of all the transactions connected with it, so as to give the Senate as perfect a view of it as possible.

I enclose you copies of all the papers transmitted to me by the Senate, of which the following is a list:

No. 1. Diagram of the position of the United States marine hospital at Rincon Point, San Francisco, California.

No. 2. Decree of the board of land commissioners, confirming the claim of the city of San Francisco to the pueblo lands.

No. 3. Certified copy of the final decree of the United States district court, confirming the decree of the land commission.

No. 4. Letter of S. W. Holladay, in place of certificate from United States surveyor general.

No. 5. Certified copy of judgment in the fourth district court, in the case of Samuel A. Morrison *vs.* The City of San Francisco.

No. 6. Copy of deed from J. C. Hays, sheriff, to James Blair, conveying lot No. 6, San Francisco.

No. 7. Certified copy of deed from James Blair to C. W. Gunnell.

No. 8. Certified copy of deed from J. C. Hays, sheriff, to J. G. Ames and S. W. Holladay.

No. 9. Certified copy of deed from J. G. Ames to D. S. Perkins.

No. 10. Copy of ordinance, dated December 10, 1852, authorizing the mayor of San Francisco to convey six specified lots to the United States.

No. 11. Certified copy of deed from city of San Francisco (by mayor) to the United States of America.

No. 12. Certified copy of a judgment in ejectment in the twelfth district court.

No. 13. Certificate of Hon. Edward Stanley, as to title of claimants.

No. 14. Copy of the order of the President of the United States to the United States marshal, December 10, 1855.

No. 15. Copy of a letter from the United States district attorney to United States marshal, San Francisco, on the subject of the order of the President of December 10, 1855.

A. Copy of bill (S. No. 175) for the relief of S. W. Holladay and others.

I am, respectfully, yours, &c.,

J. S. B.

P. DELLA TORRE, Esq.,

United States District Attorney, San Francisco.

A.

Copy of stipulation and order dismissing appeal on the part of the United States, upon notice from Attorney General.

CALIFORNIA LAND CLAIMS.

ATTORNEY GENERAL'S OFFICE,
February 27, 1857.

SIR: In the case of the claim of the city of San Francisco, confirmed to the claimant by the commissioners, case number two hundred and eighty, (280,) appeal will not be prosecuted by the United States.

I am, respectfully,

C. CUSHING.

WM. BLANDING, Esq.,
U. S. Attorney, San Francisco.

IS THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF CALIFORNIA.

THE UNITED STATES *vs.* MAYOR AND COMMON COUNCIL OF THE CITY OF SAN FRANCISCO.—D. C. 427, L. C. 280.

SAN FRANCISCO, *March 30, 1857.*

In pursuance of a notice from the United States Attorney General, hereunto annexed, it is hereby stipulated and agreed that the appeal taken in this case from the decision of the United States land commission by the United States be dismissed; that the notice of intention to prosecute said appeal on behalf of the United States be withdrawn; and that claimants have leave to proceed under the decree of said land commission in their favor, as under final decree.

WM. BLANDING,
District Attorney.

J. B. CROCKETT,
Attorney for Claimants.

HALLECK, PEACHY & BILLINGS,
Attorneys for Claimants.

Endorsed: Filed March 30, 1857.

JOHN A. MONROE, *Clerk.*
By W. H. CHEEVERS, *Deputy.*

At a stated term of the district court of the United States of America for the northern district of California, held at the courtroom in the city of San Francisco on Monday, the thirtieth day of March, in the year of our Lord one thousand eight hundred and fifty-seven—

Present: the Hon. Ogden Hoffman, district judge.

THE UNITED STATES *vs.* MAYOR AND COMMON COUNCIL OF THE CITY OF
SAN FRANCISCO.—D. C. 427, L. C. 280.

The Attorney General of the United States having giving notice that appeal will not be prosecuted in this case, and a stipulation to that effect having been entered into by the United States attorney—

On motion of the district attorney, it is ordered, adjudged, and decreed, that the appeal taken by the United States from the decision of the United States land commission in this case be dismissed, and that claimants have leave to proceed under the decree of said commission heretofore rendered in their favor, as under final decree.

OGDEN HOFFMAN,
United States District Judge.

Endorsed: Filed March 30, 1857.

JOHN A. MONROE, *Clerk.*
By W. H. CHEVERS, *Deputy.*

B.

Affidavit of J. B. McMinn.

STATE OF CALIFORNIA, }
City and County of San Francisco, } *ss.*

James B. McMinn, of lawful age, being duly sworn, doth depose and say: That he is the chief deputy county clerk in and for said county, and, as such, has in his charge and official custody the records, books, and papers of the district court of the fourth judicial district in and for said county, and is familiar with all of said records.

Deponent says he himself has made careful and diligent search for a certain execution issued out of said court on the judgment therein rendered, and of record, wherein Samuel A. Morrison was plaintiff, against the city of San Francisco, defendant, and has been unable to find the same, and believes it to be lost. Deponent further says that the records and papers, wholly or in part, in several hundred of the causes in said court for the years 1850, 1851, and 1852, are lost and missing from the files of said court, and amongst others known to be missing is the execution aforesaid. Deponent further says, that on the register of actions in said court, kept by the clerk thereof in the year 1851, appears, under the head of the suit of Samuel A. Morrison *vs.* The City of San Francisco, the following entry: "Execution, filing, entering, &c., \$3 50," which item, so charged, appears on and by said register to have been paid for accordingly, and is marked "paid," apparently in the handwriting of the other entries made by the clerk.

JAMES B. McMINN.

Sworn and subscribed before me, this 4th day of January, A. D. 1859.

JNO. HANNA,
Deputy County Clerk.

C.

Affidavit of D. O. Shattuck.

STATE OF CALIFORNIA, }
City and County of San Francisco. }

D. O. Shattuck, of lawful age, being duly sworn, doth depose and say: That he is an attorney at law by profession, of the age of forty years and upwards, and resides in said city and county, where he has resided most of the time since the year 1850.

That about the month of August, 1851, (deponent being then a practicing attorney in said county,) Samuel A. Morrison, the plaintiff in a certain judgment rendered in his favor, and of record in the district court of the fourth judicial district in and for said county, applied to deponent, as attorney, to have an execution issued thereon.

Deponent, pursuant to his request, did order an execution to issue upon said judgment, and the same was duly issued by the clerk of said court, and tested by the seal thereof, in due and legal form, and this deponent personally delivered the same to the sheriff for service, and gave the sheriff also a list of the property then belonging to the city of San Francisco, the judgment debtor in said judgment, and ordered the sheriff to advertise and sell said property.

That amongst the lots of land included in said list which deponent requested said sheriff to advertise for sale were the two 50-vara lots between Main and Stewart [Spear] streets, lying 137½ feet southeast of Folsom street, (marked 5 and 6 on the United States marine hospital plat.)

And said sheriff, John C. Hays, did accordingly advertise and sell said two lots under said execution.

Deponent further says that he remembers the above stated facts the more clearly for the reason that said plaintiff, Morrison, came to deponent's office and stated that he had the said judgment then unsatisfied; that it had cost him a good deal of money to obtain, and that he would spend no more money upon it, but offered deponent, as attorney, if he would collect said judgment, that he, said plaintiff, would give this deponent the one-quarter of the amount collected, but it should be without further costs to the plaintiff; upon which offer deponent said it was a bargain, and then proceeded to issue said execution, and delivered it to the sheriff, as above stated; and a sale of said two lots of land was made thereunder by said sheriff on or about the 23d of October, A. D. 1851. And this deponent received the proceeds of said sale from said sheriff, and endorsed his receipt for the same on said execution.

The word "Spear" interlined after the word "Stewart," on page two, before signing.

D. O. SHATTUCK.

Sworn and subscribed before me, this 31st day of December, 1858.

D. B. HEMPSTEAD, [L. s.]

*Notary Public within and for the City and County
of San Francisco, State of California.*

CC.

Affidavit of T. A. Brady.

STATE OF CALIFORNIA,
City and County of San Francisco, } ss.

T. A. Brady, of lawful age, being duly sworn, doth depose and say : That in the month of March, 1857, the deponent being then one of the deputy county clerks, and, as such, being one of the deputy clerks in the office of the clerk of the district court of the fourth judicial district in and for the city and county of San Francisco, he was requested and employed to search for the alias execution issued out of said court upon a judgment therein rendered May 20, 1851, in the suit of Samuel A. Morrison *vs.* The City of San Francisco, recorded in judgment book "A," page 243, No. 558.

Accordingly deponent searched very thoroughly, diligently, and carefully, for said execution, occupying several days in the search, among the archives and papers in said court, and appertaining thereto, and in every place where it was most likely to be found, but without finding said execution, whereby deponent became, and was, and still is, of the opinion and belief that said execution was and still is lost, and cannot, after extreme diligence, be found.

T. A. BRADY.

Sworn and subscribed before me, this 3d day of January, 1859.

WM. S. HIGGINS, [L. s.]

Notary Public.

D.

Copy of a deed from the California Land Commissioners to Holladay et al.

This indenture, made and entered into this twenty-third day of May, A. D. eighteen hundred and fifty-five, between Levi Hermance, president of the board of California land commissioners, Joseph Hopkins, and John S. Love, members thereof, of the first part, and Samuel W. Holladay, Charles R. Saunders, and Dennis S. Perkins, of the city and county of San Francisco, State of California, parties of the second part, witnesseth : That the said parties of the first part, for and in consideration of the sum of four hundred and twenty-five (\$425) dollars, in hand paid by the parties of the second part to the State of California, the receipt whereof is hereby acknowledged by us, as commissioners on the part of the State, have granted, bargained, sold, and quit-claimed, and by these presents do grant, bargain, sell, and quit-claim, unto the said parties of the second part, and to their heirs and assigns forever, "all the right, title, and interest, of the State of California" in the following described piece or parcel of land situate, lying, and being within the city of San Francisco, county of San Francisco, and State of California, known and described as follows, to-wit: All that certain San Francisco water lot situate on the

northeasterly side of Main street, described as follows, to-wit: commencing one hundred thirty-seven and a half ($137\frac{1}{2}$) feet southeastwardly from the southeasterly intersection of Folsom and Main streets; thence running northeastwardly, parallel with Folsom street, one hundred thirty-seven and a half ($137\frac{1}{2}$) feet; thence southeastwardly, parallel with Main street, forty-five feet ten inches, ($45\frac{1}{2}$); thence southwestwardly one hundred and thirty-seven and a half ($137\frac{1}{2}$) feet to Main street; thence northwestwardly, on the line of Main street, forty-five feet ten inches ($45\frac{1}{2}$) to the place of beginning; being lot number fourteen as designated on the map used by the parties of the first part, in their sales of beach and water lots advertised to take place on the 26th day of October, 1854.

Together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging, which are or may hereafter be the property of the State of California, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof, which may be due or become due to the State of California; and also all the estate, right, title, interest, property, possession, claim, and demand whatsoever, as well in law as in equity, of the said party of the first part, of, in or to the above described premises, and every part and parcel thereof, with the appurtenances as aforesaid: To have and to hold, all and singular, the above mentioned and described premises, together with the appurtenances as aforesaid, unto the said parties of the second part, their heirs and assigns, forever.

In witness whereof, the said parties of the first part, for and in behalf of the State of California, have hereunto set their hands and seals this day and year first above written.

LEVI HERMANCÉ, [L. s.]

President.

JOSEPH HOPKINS. [L. s.]

JNO. S. LOVE. [L. s.]

STATE OF CALIFORNIA, }
County of San Francisco, } ss.

Be it known, that on this twenty-third day of May, 1855, personally appeared before me the subscriber, a notary public for the State and county aforesaid, Levi Hermance, president, and Joseph Hopkins and John S. Love, personally known to me to be the persons who are described in, and who executed, the foregoing deed, and who acknowledged that they, as commissioners for the State of California, executed the same freely and voluntarily, and for the uses and purposes therein mentioned.

In testimony whereof, I have hereunto set my hand and affixed [L. s.] my seal of office the day and year last above written.

A. A. SILOVER,

Notary Public.

The above and foregoing is a true copy of a deed and the acknowledgment thereof exhibited to P. Della Torre, United States district attorney, &c., at San Francisco, January 4, 1859, and now in my possession.

S. W. HOLLADAY.

E.

The deposition of Abia A. Silover.

STATE OF CALIFORNIA, }
City and County of San Francisco. }

The undersigned, Abia A. Silover being duly sworn, doth depose and say: That he has been for several years past, and still is, engaged in the purchase and sale of real estate in the city of San Francisco, California, whereby he is familiar with the prices and value of land in said city; that he has examined the two fifty-vara lots of land on Rincon Point, in the block bounded by Harrison, Spear, Front, (now called Main,) and Folsom streets, and numbered as lots five and six on the plot of the United States marine hospital lots, and situated 137½ feet southeast of Folsom street, and parallel therewith, between Main and Spear streets; that, in the opinion of deponent, these two fifty-vara lots are now worth the sum of fifteen thousand dollars each. And further deponent saith not.

A. A. SILOVER.

Sworn and subscribed before me, this 22d day of October, A. D. 1858.

F. J. THIBAUT, [L. s.]
Notary Public.

F.

The deposition of Richard H. Sinton.

STATE OF CALIFORNIA, }
City and County of San Francisco. }

The undersigned, Richard H. Sinton, being duly sworn, doth depose and say: That he has been for several years past, and now is, engaged in the purchase and sale of real estate in the city of San Francisco, California, whereby he is familiar with the prices and value of land in said city; that he has examined the two fifty-vara lots of land on Rincon Point, in the block bounded by Harrison, Spear, Front, (now called Main,) and Folsom streets, and numbered as lots five and six on the plot of the United States marine hospital lots, and situated 137½ feet southeast of Folsom street, and parallel therewith, between Main and Spear streets; that, in the opinion of deponent, these two fifty vara lots are now worth the sum of fifteen thousand dollars each. And further deponent saith not.

R. H. SINTON.

Sworn and subscribed before me, this 22d day of October, A. D. 1858.

F. J. THIBAUT, [L. s.]
Notary Public.

G.

The deposition of Henry A. Cobb.

STATE OF CALIFORNIA, }
 City and County of San Francisco. }

The undersigned, Henry A. Cobb, being duly sworn, doth depose and say: That he has been for several years past, and still is, engaged in the purchase and sale of real estate in the city of San Francisco, California, whereby he is familiar with the prices and value of land in said city; that he has examined the two fifty-vara lots of land on Rincon Point, in the block bounded by Harrison, Spear, Front, (now called Main,) and Folsom streets, and numbered as lots five and six on the plot of the United States marine hospital lots, and situated 137½ feet southeast of Folsom street, and parallel therewith, between Main and Spear streets; that, in the opinion of deponent, these two fifty-vara lots are now worth the sum of fifteen thousand dollars each. And further deponent saith not.

H. A. COBB.

Sworn and subscribed before me, this 25th day of October, A. D. 1858.

C. J. BRENHAM, [L. s.]
Notary Public.

H.

Report from B. F. Washington, esq., concerning lots 5 and 6, marine hospital grounds.

CUSTOM-HOUSE, SAN FRANCISCO,
Collector's Office, January 7, 1859.

SIR: In answer to your communication of the 31st ultimo, I would state, in reply, that I have made inquiry of two real estate auctioneers as to the value of lots 5 and 6, within the hospital enclosures. One of them estimates their value to be \$12,500 each, but the other informs me that they would not sell for cash, with a perfect title, to exceed \$7,000; for each lot only \$3,500. This, I apprehend, is nearer the mark, and what I regard to be the true value of the property.

I cannot say that they are "indispensable for the use of the hospital," though I deem their possession most important to the government. It is not well to contract the space now enclosed. The patients need room, and to dispense with two fifty-vara lots would leave but little ground to exercise in. Besides, the washing is all done on the premises, and it requires a great deal of space for that purpose. Those lots, too, are situated on the declivity of the hill, and large structures erected on them would cut off from the hospital the winds which prevail from that quarter during the summer months. The

location which is now so healthy might thereby be rendered a very sickly one. The same reason cannot apply to the lower lots, because they are not sufficiently elevated to ever obstruct the winds striking the hospital.

Very truly, your obedient servant,

BENJ. F. WASHINGTON,
Collector.

P. DELLA TORRE, Esq.,
United States District Attorney.

I.

Copy of statement of Major E. D. Keyes.

SAN FRANCISCO, July 10, 1852.

SIR: In answer to your letter of June 2, proposing certain inquiries relating to the government reserves in this vicinity, I have the honor to reply as follows. To avoid repetition, I will give such information as I possess of the separate reservations, instead of following the exact order of your interrogatories.

It appears that on the 6th day of October, 1846, Pio Pico, then commanding general of this department, made a grant of the Rancho de los Lobos to Benito Diaz, reserving the presidio and fort, the boundaries of which were not defined. This grant needed the approval of the departmental assembly, which it never obtained, for the reason, as is alleged by the present holders, that the disturbances in the country prevented its session.

It is understood that Benito Diaz sold his right to the Rancho de los Lobos to Thomas O. Larkin, who afterwards sold to Dexter R. Wright; and in 1849, the lands having become valuable, a conflict for their possession began between Wright, the claimant, and myself and the troops, as possessors on the part of the United States. The United States troops having had continuous possession since the early part of 1847, I succeeded in keeping possession, against the efforts of Wright and large numbers of squatters, until the spring of 1850. At that time the commission of engineers and naval officers having selected such portions of ground between the city of San Francisco and the ocean as were deemed necessary for the defences of the harbor, Dexter R. Wright entered into bonds to quit-claim to the United States the portions of the rancho so selected, for the consideration that the United States should immediately withdraw all military control from the remainder.

Mr. Wright's bond is dated April 27, 1852, and a map describing the boundaries of the presidio and Point San José reservations, may be found in the office of the commanding general of the Pacific division. At the same time I withdrew military control from the remainder of the Rancho de los Lobos, according to instructions from Brigadier General Riley, commanding the 10th military department.—(See papers marked A and B, herewith enclosed.)

Since the 27th of April, 1852, the President of the United States issued an order reserving from sale the lands selected by the military and naval commission for the defences of this harbor, and which embraces the San José, presidio and fort reservations. In the copy of that order, once shown to me by Mr. Allan A. Hall, (no copy was ever sent to me,) those reserves were not properly described, nor so described as to enable one to trace their outlines.

The San José reservation is embraced within the present recognized limits of the city of San Francisco, I think, and a portion, if not the whole of it, has been laid out into lots and sold by squatters, and is, therefore, of course, lost to the government.

The San José reserve embraces not far from eighty acres, and is actually worth about \$25,000.

The presidio reservation embraces about 2,500 acres, (I only judge from looking and walking over it,) and is worth say \$500,000. It is clear from squatters, but the top of the highest hill is occupied for a telegraphic station by a man who entered by permission of the quartermaster in 1851, while the troops were absent in the Indian country. I understand he stipulated to occupy solely for the purposes of the telegraph; but as he has brought a plank on public grounds and set it up, he will hold the land forever, or he will belie all past experience.

Without entering into a discussion of the tenure of the Mexican authorities to the lands reserved by the President for the defences of this harbor, or of the merits of the grant by Pio Pico to Benito Diaz, I have no doubt the title of the United States to the whole of them is good, and that the government will be permitted to use such portions as it now has in actual possession.

I will now proceed to describe the public reserves on the eastern part of the city of San Francisco, and which, to my knowledge, have never been confirmed by Congress, nor, formally, by the President of the United States.

The 10th day of March, A. D. 1847, Brigadier General Stephen W. Kearny, United States army, governor of California, issued his proclamation ceding to the town of San Francisco, under certain stipulated conditions, the whole of the beach and water lots on the eastern front of the town, except such portions as might be selected by the senior officers of the army and navy there for public purposes.—(Paper marked C.)

It does not appear that any reservations were immediately made under the proclamation of General Kearny, as on the 23d of the following June Colonel Mason, successor to General Kearny, wrote to Major Hardie, then commanding this post, directing him to confer with Commodore Biddle, or other senior naval officer, and to make certain selections for government purposes.—(Paper D.)

Accordingly, Major Hardie, having made the selections, wrote to the alcalde (Hyde) on the 18th of July, 1847, to describe them, and to notify him of the fact and his authority.

He reserved all the portion of Rincon Point not marked off into lots, which is (now) marked on the map of San Francisco "Government Reserve;" also, all the lots bounded by Washington, Montgomery, and Jackson streets and deep water, and also all those lots bounded by

Sansom, Pacific, and Broadway streets and deep water. All were then, as they now are, marked on the map of San Francisco, "Government Reserve."—(See paper marked E.)

On the 30th September, 1847, Colonel Mason himself made another reservation, and directed Alcalde Hyde to dispose of no more land to the southward of Rincon Point and to the eastward of a line through the northwest corner of the Rincon Point reserve south, eleven degrees west; stating, further, that the land so reserved was intended for the use of the United States government, and that the southern boundary would be more particularly described when the town surveys should be complete.—(See paper marked F.)

As the reservation made by Colonel Mason was not defined at the south, it has not, to my knowledge, been since regarded. It has been sold or granted by the town, like other portions, without any subsequent interference on the part of the officers of the government of the United States.

I assumed command of the post of San Francisco the 1st of May, 1849, but I was not charged with the care of the reserves in the town of San Francisco till August of that year. In the letter of General Riley, of August 9, it is stated that Mr. Steinbergen and Mr. Thompson were the only persons entitled to occupy any portions of those reserves.—(See paper marked G.)

Mr. Steinbergen was in the actual possession of nearly all the dry land which was subsequently leased to him by myself, excepting the 50-vara lot at the corner of Sansom and Pacific streets, claimed and occupied by Mr. Thompson, and the other 50-vara lot fronting on Sansom street, for which Mr. B. K. Buckelew had what seemed a good title, with possession. Mr. Thompson had been permitted by Colonel Mason to occupy the 50-vara lot claimed by him until his claim could be decided at Washington. The matter was referred to Washington, and has never, to my knowledge, been acted on. That 50-vara lot is now owned, I understand, by several persons; and the same by Mr. Buckelew's lot. I have papers relating to Mr. Thompson's claim, which was not considered good by Colonel Mason, but I deem it superfluous to copy them.

I also found that Charles L. Ross had been permitted to occupy a portion of the block pointing on Montgomery street, between Jackson and Washington streets, and that he and others claimed the whole of that block. I found several buildings upon it, and that it was alleged to be covered by a Mexican grant to one Nye. I could never delve to the bottom of that claim, nor get possession of the block. Mr. Ross made \$100,000 from it, and it is now parcelled out among many innocent holders, and is mostly covered, or being covered, except the water front, with fine brick buildings.

Finding that the increase in the value of property and the propensity to squat had become so great that I could not protect the reserves, I proposed to General Riley the propriety of leasing them to responsible individuals for a term of years. I felt confident that in no other way could they be ultimately preserved to the United States. General Riley approved of my proposition, and on the 16th November, 1849, directed me to turn over to the collector a site for the custom-house,

and to lease the remainder under certain conditions. I obtained the highest price specified, and my leases were subsequently approved, reluctantly, by General Riley, as I had departed from his instructions in regard to time, but not materially in any other respect. I found that no responsible person would lease the lands for the short time specified by him, and as the delay necessary to write to Monterey would have been fatal, I got the best terms I could. I enclose General Kiley's letter of November 16, marked H, and the leases to Messrs. Steinbergen and Shillaber, marked I and K.

The collector (Collier) accompanied me when I set off for the custom-house the ground on Broadway, two hundred and fourteen feet by one hundred and twenty feet, as described in the lease to Mr. Steinbergen. I understand that a more central site for a custom-house has been selected and surrendered from a portion of the reserve fronting on Battery street, which was leased to Mr. Shillaber: if so, the site originally intended for the custom-house (now much less central than the present site) will answer admirably for bonded warehouses, unless that portion shall have been given up to Messrs. Palmer, Cook & Co., in exchange for the other site. I have made no inquiry on this point.

In regard to the value of those reservations in the city which were leased, I do not deem it necessary to make a minute estimate. Supposing the titles to them to be good, with clear possession their value would be very great, as they embrace some of the best property in San Francisco.

I do not think the lessees have yet derived one penny's profit from any of the reservations, unless Mr. Steinbergen made something by selling out in a mass to Messrs. Palmer, Cook & Co. These latter gentlemen now hold by far the most valuable portions of the reservations, but they have not, to my knowledge nor in my belief, yet derived any profit. They assure me they have not, as the fires and continued lawsuits to get possession have swept away all the receipts.

Besides Messrs. Palmer, Cook & Co., there are numerous smaller claimants in and out of possession, some of whom are squatters, and some of whom purchased with faith more or less good, and with intents more or less pure. Those who claim in good faith under the leases ought to be protected by the leases, so far as they extend; and those who do not claim under the leases have not, to my knowledge, any other than squatter titles.

I cannot close this communication without referring to a letter from the Adjutant General's office, dated —, 1850, which was written after I had involved myself in a most vexatious and expensive lawsuit for having ejected squatters from the reserves by force. What bearing this communication might have upon the spirits of those who have only possessory titles I will not attempt to determine.

I have the honor to be, sir, your most obedient servant,

E. D. KEYES,

Capt. 3d Art'y, Com'g at San Francisco.

Major O. CROSS,

Quartermaster United States Army.

Report upon the title of lots Nos. 5 and 6, hospital grounds, San Francisco.

SAN FRANCISCO, January 19, 1859.

SIR: Pursuant to your instructions in relation to the lots Nos. 5 and 6 within the block upon which the United States hospital is built in this city, I ask to report.

The present claimants derive title from sheriff's sale, made upon execution under a judgment against the city of San Francisco. The United States hold a quit-claim deed from the city.

It will be requisite to examine, first, whether the city has at any time had any, and what, title in the premises; and next, whether, under the proceedings against the city, the claimants obtained the title which had been in the city.

The first point is requisite in order to ascertain whether any title can be supported in the United States independently of its claim through the city; the second, because the sheriff's deed to claimants is unquestionably prior in time to the release by the city to the United States.

The examination must further be made with regard to the nature of the land, as to whether it be high land or water lot, for the question of title may depend upon this circumstance. A portion of both lots is high land, and a portion water lot.

And first, as to the high land: The city of San Francisco claims that the lands in question were, among others, the property of its municipal corporation, and accordingly about the — day of —, 18 —, filed a petition before the board of land commissioners, claiming a confirmation for some four leagues of land.—(Case No. 280, land commission.) The commissioners held that, under the 14th section of the act of 1851, "it was the intention of Congress, when a town was proven to be in existence on the 7th of July, 1846, that a grant should be presumed for all the lands at that time held and occupied by such town as a municipal corporation under the laws of Mexico, including such lots as had been previously granted by the town or its lawful authorities. That, in accordance with such presumption, the land should be confirmed to the corporate authorities of the town, which confirmation should enure to the benefit of the lot holders under grants from the town, and should operate as a release of the rights of the United States to the remainder of the land in favor of the corporation for the common use and benefit of all the inhabitants without prejudice to the rights of third parties."

Applying these principles to the evidence in the case, the commission decided that the claim of the city was valid to some land, but not to the whole extent claimed, and proceeded to fix the boundaries. The lots in question are within the limits of the tract so confirmed to the city.

(The decree of the board will be found, marked No. 2, among the papers herewith returned.)

The city of San Francisco has appealed from that decree, and is now in the district court, insisting upon a confirmation to the whole extent originally claimed; but, on the part of the United States, the

appeal to the district court was dismissed on the 30th March, 1857, by order of Mr. Attorney General Cushing. A copy of the letter and stipulation based thereon, as filed in the district court, is sent herewith, and marked A.

Had the city also dismissed its appeal, this proceeding would have been binding upon the United States, and the decree of the board of land commissioners would have been "final and conclusive" against the government. But as it has been held in *Ritchie's case*, 17 Howard, that the so-called appeal to the district court is in reality the institution of a new proceeding, it may perhaps be doubted whether the whole question is not in this manner brought before the court upon the action of either party, totally unaffected by any dismissal of the appeal from the land commission on the part of the other.

How far under the present circumstances the rights of the United States are to be considered as bound by the dismissal of the appeal on their part, whilst the cause is being prosecuted in the district court by the claimants, I submit for your decision.

The supreme court of this State has held that it is binding upon the United States, and that all title which has accrued within the corporate limits since the 7th July, 1846, must be deraigned from the city. "The confirmation of the city title by the United States land commissioners, and the dismissal by the Attorney General of the United States of the appeal from their decision, has settled that no title to lands within the limits of the city can hereafter be acquired from the United States. It also follows that any title accruing to any individuals since the 7th July, 1846, must have been derived from the local authorities of the city."—(*Norton vs. Hyatt*, 8 Cal. Rep., page 539.)

It may be conceded that this is not one of those cases in which the United States courts would be bound to follow the decision of the State courts, but I refer to it that you may see how the action of the government has been construed here as affecting title. If the view of the court in *Norton vs. Hyatt* be correct, then the title to these lots as against the United States must be held to have vested in the city as far back as July 7, 1846; and, as between the United States and the present claimants, the party who first obtained the legal title from the city must prevail.

This brings us to an examination of the question as to what party first acquired the city title, whatever it may be, to this property. As the claimants, Messrs. Holladay and others, derive title under sheriffs' deed in the case of Samuel A. Morrison *vs.* The City of San Francisco, I have examined the record of that case; it is in the district court of the fourth judicial district of this State, a court of competent jurisdiction. The complaint was filed on the 3d of January, 1851, and the sheriff's return shows that the process thereon was executed "by serving it on William Green, president of the board of aldermen, acting mayor of the city of San Francisco, in the absence of John W. Geary, mayor, personally, by copy of this writ, together with a copy of the complaint, January 18, 1851. John C. Hays, sheriff, by J. Caperton, deputy sheriff."

The mode of service, as prescribed by the California act of 1850, 1st Statutes at Large of California, chapter 142, section 26, page 430, was

in the case of a corporation, by delivering the summons, together with a copy of the complaint, "to the president, or other head of the corporation, secretary, cashier, or managing agent thereof." By the then charter of the city of San Francisco, it was provided that "the president of the board of aldermen shall exercise the duties and receive the compensation of mayor, whenever and so long as from any cause said office of mayor shall be vacant, or the mayor be absent from the city."—(Statutes of 1850, chap. 99, art. iii, sec. 4, p. 227.)

On the 19th of May, 1851, judgment was had for the plaintiff, and on the 26th May, 1851, execution was issued against certain other property of the defendants; but I cannot find the original execution, by virtue of which the lots in question were sold by the sheriff. But the alias execution is recited in the sheriff's deed, and, as proof of the existence and loss of the said execution, the claimants have furnished affidavits of James B. McMinn and D. O. Shattuck, both of them gentlemen entitled to the fullest credence, from their character and standing in the community. Their affidavits are annexed, marked, respectively, B and C; also affidavit of T. A. Brady, marked CC.

Copies of the judgment and of the sheriff's deeds for these lots were sent out to me with the papers in this case, marked, respectively, Nos. 5, 6, and 8. They are herewith returned.

It might be objected that the act of 29th April, 1851, giving the right of redemption to sales of real estate under execution, having been passed before the sheriff's sale in this case, the proceedings should have been had in the mode pointed out by that act; but the point has been fully settled in favor of the mode adopted in this case, in the case of *Thorne vs. The City of San Francisco et al.*, 4th Cal. Rep., page 127.

The sheriff's deed, conveying this property to the parties from whom claimants deraign title, bear date the 23d October, 1851, whilst the quit-claim from the city to the United States is of the date of the 11th December, 1852. Upon this point it only remains for me to add, that the city lands of San Francisco are liable to sale under execution against the city. This doctrine is firmly established and cannot be shaken. I refer for full exposition of the law to the recent case of *Welch vs. Sullivan*, 8th Cal. Reports, pages 165 and 511.

By reference to the plat sent me with the other papers in this matter, it will be perceived that a portion of these lots are water lots, the boundary of the high land being indicated by the dotted lines. The title to this depends upon different considerations.

It has always been held in this State, upon the authority of *Pollard's Lessee vs. Hagen*, 3d Howard, 212, that, upon the admission of California into the Union, the lands lying between the high water mark and the channel, vested immediately and absolutely in the State. Acting upon this doctrine, the State has at different times made provision for the disposal of this property. By the act of March 26, 1851, (*Wheeler's Land Titles*, page 114, *Compiled Laws of Cal.*, p. 764,) the use and occupation of all the beach and water lots described in the act, (including those in question,) was granted to the city of San Francisco for the term of ninety-nine years. A grant of the same term was also made to certain purchasers or grantees from the city,

(section 2.) If, then, the sale and conveyance by the sheriff, under the Morrison judgment, was valid, it must have operated to convey to the purchasers a term of ninety-nine years, of which the city was then possessed, leaving the reversion after the expiration of the term still in the State. On the 18th May, 1853, the State passed an act for the sale of her interest in the property described in the act of March 26, 1851, hereinbefore cited.—(See Compiled Laws Cal., page 767, particularly sections 7 and 8.)

The claimants to these lots propose to give title, acquired by purchase under this law from commissioners duly appointed to act therein, of all the interest and reversion that remained in the State after the act of 1851. They have furnished me with a copy of their deed to water-lot portion of Lot No. 5, which is enclosed, and marked D; the conveyance of the water-lot portion of No. 6 is outstanding, but claimants, of course, will procure it, if the United States decide to make the purchase, and have now an agreement to that effect from the holders.

I am also further instructed to inquire “where the claimants of said lots reside, and whether they had notice of the purchase by the government and knew of the erection of the hospital, or made any objection thereto.”

In reply, I beg to say, the parties claiming these lots 5 and 6 have been for several years residents of the city of San Francisco. They were aware of the quit-claim deed by the city to the United States. They were also aware of the building of the hospital, and made no objection. It is to be observed that the hospital building is upon no part of their claim. When the government proceeded to fence in lots 5 and 6 claimants remonstrated, and filed their bill in the superior court of the city of San Francisco against James Y. McDuffie, then United States marshal, and — Nye, then steward of the hospital, for an injunction restraining them from so doing, which was granted.

One of the Senate resolutions inquires “what is the present value of said lots 5 and 6, and whether the said lots are indispensable for the use of the hospital?”

The claimants have furnished me with affidavits as to the value of these lots from three real estate brokers of this city, which are herewith enclosed, and marked E, F, and G.

Upon that point, and upon the other branch of the inquiry directed by this last resolution, I ask to annex a report of B. F. Washington, esq., collector of the port, under whose supervision the institution is placed by law. I am personally not sufficiently informed upon the point of the necessity of these lots for the purposes of the building, and of course could not be, without an opportunity of observing practically the working of the institution. I therefore respectfully refer to the report of the collector. This report is marked H.

Another resolution inquires whether there are any outstanding claims of title to any other part of said hospital square?

I have heard, but I am unable to ascertain with any certainty, that there are some outstanding “Colton grants.” There were also grants of this nature of lots Nos. 5 and 6, but they have been gotten in and held by the claimants. I must here remark that the “Colton grants”

are considered of no validity whatever. In no single instance have they ever been supported, and even when known to be outstanding, they are not considered as any cloud or shade whatever upon title, and are never noted in any abstracts. I state this as a matter of general and familiar professional knowledge to the bar of this city.

I beg further to call your attention to the fact that an attempt was made by some of the military officers of the general government to set off these lots, among much other land, as a reserve for government purposes. But I can find no authority, neither general nor specific, for any such action on their part, and for want of power their proceedings must be invalid. I ask to forward with this a copy of the statement of Major E. D. Keyes, who was an actor in the matter, which gives full information on the subject. (Copy marked I.)

I have reported upon all matters connected with the original city title to this land, and with the proceedings by which it is alleged that title was divested. You will observe that the sheriff's sales of the city interest, and the conveyances under the sales, were of the date of 23d of October, 1851, whilst the conveyance from the city to the United States was not made until December 11, 1852.

The abstract of title from the purchasers at sheriff's sales to the present claimants is satisfactory, with the exception that there are some outstanding incumbrances to a small amount. These, of course, will be removed if the government deems it necessary to purchase the interest of the claimants.

I return the papers which you sent to me for the purposes of this report. They are designated by numbers. The papers which are now for the first time sent to you are marked alphabetically.

Respectfully submitted.

P. DELLA TORRE,
United States Attorney.

Hon. J. S. BLACK,
United States Attorney General.

REPORT
OF THE
SECRETARY OF THE TREASURY,

IN ANSWER

To a resolution of the Senate calling for information in relation to American vessels engaged in the palm oil trade on the coast of Africa.

JANUARY 31, 1859.—Referred to the Committee on Foreign Relations. Motion to print referred to the Committee on Printing.

FEBRUARY 1.—Report in favor of printing submitted.

FEBRUARY 18, 1859.—Report considered and agreed to.

TREASURY DEPARTMENT,
January 28, 1859.

SIR: I have the honor to transmit herewith four statements prepared by, and a report from the Register of the Treasury, under this date, accompanying the same, which contain all the information called for by Senate resolution of the 17th, in regard to statistics of trade with Africa, &c., that can be furnished by this department from the means in its power.

I am, very respectfully,

HOWELL COBB,
Secretary of the Treasury.

HON. JOHN C. BRECKINRIDGE,
Vice President of the United States and President of the Senate.

TREASURY DEPARTMENT,
Register's Office, January 28, 1859.

SIR: The information called for by the Senate resolution of January 17, as to the "number of American vessels which are engaged directly in the palm oil trade on the coast of Africa, the average number of their voyages annually, their tonnage, the nature and value of their exports and imports, and the amount of duties derived from them," cannot be given as to the number of vessels engaged in the palm oil trade from any statistics in this office. I have the honor to enclose herewith statements exhibiting the quantity and value of domestic and foreign exports and imports in American vessels to and from the coast of Africa, the amount of duties derived from them, and the number and tonnage of American vessels which entered and cleared thereto, during the fiscal year ending June 30, 1858.

I am, very respectfully,

F. BIGGER, *Register.*

HON. HOWELL COBB,
Secretary of the Treasury.

PALM OIL TRADE.

Statement exhibiting the quantity and value of goods, wares, and merchandise the growth, produce, and manufacture of the United States exported in American vessels to the coast of Africa, and the number and tonnage of American vessels which cleared therefor, during the fiscal year ending June 30, 1855.

Species of merchandise.	British possessions in Africa.		French possessions in Africa.		Other ports in Africa.		Total.	
	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.
Adamantine candles.....	10,160	1,437	560	110	112,638	18,978	128,353	30,523
Beef.....	100	3,539	19	343	636	10,684	100	14,566
Beef, salt, porter, and cider.....	47						696	
Beef, Do.....	62	130			130	70	130	70
Biscuits or shipbread.....	2,470	10,886	300	780	5,387	17,474	8,137	28,500
Biscuits or shipbread, Do.....	1,330	6,510	3	856	1,499	69,865	2,821	29,192
Boards, plank and scantling.....	349	1,880	59		1,574	492	1,652	67,631
Books and maps.....								1,772
Brooms and brushes of all kinds.....		940				57		57
Bricks, lime, and cement.....		336	625	97		143		363
Butter.....	1,799	1,941	10	196	17,344	4,186	19,769	4,619
Cables and cordage.....	113	2,500			136	1,698	249	2,985
Carriages and parts thereof.....		335						2,500
Cheese.....	5,080	2,506						1,354
Coal.....	845	6,570						2,506
Copper and brass, and manufactures of.....		610				719		1,973
Drugs and medicines.....								864
Earthen and stoneware.....		450	5	19	601	1,060	708	2,339
Flax, dried or smoked.....	168	405			187	2,017	347	2,498
Flax, pickled.....	50				88		300	
Gold and silver coin.....								306
Grapewood.....	97,370	5,450			923,213	194,393	923,083	197,743
Hams and bacon.....	6,536	774	378	36	57,998	4,608	44,813	5,619
Hats of fur and silk.....						553		683
Hats of palm leaf.....		450		380		1,860		1,590
Other lumber.....	15,065	1,470			12,470	10,669	98,075	10,769
Ropes.....		28,963				1,060		2,470
Household furniture.....		1,480				9,370		48,373
Ice.....	490						400	1,480
India rubber shoes.....		810			360	260	360	360
Indian corn.....	9,688	8,628				194		1,002
Indian corn meal.....	6	30	5	19	1,893	1,374	11,945	10,006
Iron, castings.....	730	2,080			38	638	147	671
Iron, nails.....		3,163				185		2,773
all other manufacture of.....	87,000	19,455	3,100	115	94,687	1,030	114,737	4,968
						28,974		40,730

Jewelry, real and imitation.....	600	5,500	467	5,081	1,516	18,312	609
Lard, oil.....	1,749	5,100		5,100	5,976	5,976	5,977
Leather, boots and shoes of.....	1,643				5,785	5,785	5,785
Leather, harness of.....	600				38,385	38,385	38,385
Linseed oil.....	587,743	5,020	840	187,180		580,180	100,385
Tobacco, manufactured.....							
Cotton, manufactures of—							
Painted, printed, or dyed.....	5,380				145,148		147,493
White, other than duck.....					360,748		362,748
Duck.....					5,518		5,519
Other manufactures of.....					133,708		133,708
Glass, manufactures of.....					546		546
Hemp, manufactures of—							
Bag.....					500		500
Thread.....					45		45
Other manufactures of.....	50				1,055		1,105
Pewter and lead, manufactures of.....					40		40
Manufactures of wood.....	11,885		36		9,687		90,548
Morocco.....					319		319
Morocco and other leather not sold per pound.....					1,003		1,003
Musical instruments.....	400				57		57
Musical instruments.....	400				1,875		2,575
Whale and other fish oil.....	535				483		913
Onions.....					80		80
Paints and varnish.....	110				1,919		1,339
Paper and other stationery.....	385				1,541		1,595
Pork.....	6,028	30	454	546	9,847	911	16,339
Potatoes.....					13		13
Printing presses and type.....					110		110
Rice.....	4				441		445
{ barrels.....		248			13,744		13,985
{ sterces.....		315			365		365
Rosin and turpentine.....	370				1,453		2,158
Eye, oats, and other small grain and pulse.....	1,479				288		1,807
Saddlery.....	50				50		50
Salt.....					31		31
Shingles.....	587		430	663	2,181		5,890
Soap.....	83,060			102,603	7,996		11,380
Spermaceti and sperm candles.....				1,500	7,587		7,587
Spirits from grain.....				13,440	265,983		345,886
do.....	47,000	51,915	5,690	667,670	753		823,880
all other material.....			97	1,165	1,515		1,779
Spirits of turpentine.....	1,000	340		3,177	1,456		1,796
Staves and heading.....	513	12,859		1,155	38,679		41,468
Sugar, brown.....	10,180	550		1,155	8,807		11,757
do.....	5,980	370	610	94,183	10,283		11,393
refined.....	80	192	97	883	5,156		5,447
Tar and pitch.....	46			660			
{ hides.....		13,996					
{ cases.....							
Tobacco, leaf.....	105		13,775	5	181,129		307,640
Trunks and valises.....		930		5	283		1,953
Umbrellas, parasols, and sun-shades.....					354		354
Vinegar.....	3,656	353		815	140		492
Wax.....				1,033	173		173
Wearing apparel.....					4,155		4,155

STATEMENT—Continued.

Species of merchandise.	British possessions in Africa.		French possessions in Africa.		Other ports in Africa.		Total.	
	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.
Wheat.....	4,538	5,848	.....	.....	.....	.....	4,538	5,848
Wheat flour.....	11,305	71,978	.....	.....	.....	.....	94,527	132,183
All other articles manufactured.....	.....	53,468	.....	.....	.....	.....	.....	68,447
All other articles raw.....	.....	157	.....	.....	.....	.....	.....	3,904
Total.....	.....	382,579	.....	55,177	.....	1,705,814	.....	9,185,370
Number of American vessels cleared.....	No. 38	Tons. 97,974	No. 9	Tons. 264	No. 53	Tons. 15,008	Total No. 99	Total tons. 43,434

F. BUCKNER, Register.

TREASURY DEPARTMENT, Register's Office, January 31, 1899.

Statement exhibiting the quantity and value of goods, wares, and merchandise, of the growth, produce, and manufacture of foreign countries, exported in American vessels from the United States to the coast of Africa during the fiscal year ending June 30, 1858.

Species of merchandise.	British possessions in Africa.		French possessions in Africa.		Other ports in Africa.		Total.	
	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.
FREE OF DUTY.								
Coffee.....	1,946	924	1,946	924
Teas, from their place of production in certain vessels.....	3,132	1,783	3,132	9,713
Gold coin.....	1,445	680	601	590	.....	93,598	5,535	93,598
All other articles.....	69	.....	60
Total.....	680	.....	990	.....	95,345	.....	95,955
PAYING DUTIES AD VALOREM.								
Acids—sulfuric, benzoic, boracic, citric, muriatic.....	3,613	159	3,613	158
Cheese.....	559	150	.....	.....	.....	.....	590	180
Beer, ale, and porter, in casks.....
.....in bottles.....	60	40	60	40
Cordage, unwaxed.....	188	91	188	91
Cotton, and manufactures of—
Piece goods.....
Manufactures of, not specified.....
Piece goods, wholly of cotton.....
Fish—
Dried and smoked.....
Mackerel.....	33	104	33	104
Salmon.....	959	9,500	959	9,500
All other.....
Sardines and other fish in oil.....
Linen, bleached or unbleached.....
Raisins.....	8,000	800	.....	.....	890	60	8,890	890
Glass—
Silvered.....
Window, broad, crown, or cylinder.....	1,000	60	.....	.....	.....	.....	1,000	60
Manufactures of, not specified.....
Jewelry, real or imitations of.....
Gunny bags.....
Hats and bonnets of straw, and all other vegetable substances.....

Statement exhibiting the quantity and value of goods, wares, and merchandise imported in American vessels from the coast of Africa, the duties received thereon, and the number and tonnage of American vessels which entered therefrom, during the fiscal year ending June 30, 1908.

Species of merchandise.	British possessions in Africa		Other ports in Africa.		Total.		Duties received thereon.	
	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.	Rate.	Dollars.
FREE OF DUTY.								
Arpols or crude tarlar.....		175				175		
Animals, living, of all kinds.....				69		69		
Articles the produce of the United States.....		4,142		2,797		6,939		
Coin—								
Gold.....		886		94,425		95,311		
Silver.....		1,198		2,031		10,159		
Rullion, gold.....		1,115		50,319		51,387		
Coffee..... pounds.			977,485	77,356	977,485	77,356		
Copper—								
Old.....		2,756		922		3,678		
Ore.....				6,063		6,063		
Dye wood, in stick.....		945		12,617		24,923		
Ivory, unmanufactured.....		1,618		365,696		364,516		
(Oil, spermace, whale and other fish.....		338				338		
Old junk and oakum.....		35		308		327		
Seeds, trees, shrubs, bulbs, plants and roots, not otherwise pro- vided for.....		30				30		
Wool, sheep's, unmanufactured, in value not exceeding 30 cents per pound.....		400,031		5,548		405,573		
All other articles.....		14		10		24		
Total.....		413,153		568,973		972,485		
PAYING DUTIES AD VALOREM.								
Arrow root..... pounds.	410	61	940	28	650	83	15 per cent.	19 45
(Ordage, untarred..... do.			34,877	857	34,977	857	19.....do.	163 83
Bacon..... do.			1,942,413	97,680	1,942,413	97,680	8.....do.	2,360 40
Bones..... do.				33		33	8.....do.	2 64
Linens..... do.							8.....do.	616 08
Other green, ripe, or dried fruit.....		2,593	1,347,187	975,859	1,371,687	975,453	8.....do.	52,376 16
Gums, Arabic, Barbary, copal, &c..... pounds.	94,500	69	54,970	4,988	54,688	4,257	8.....do.	347 56
All other gums or resins in a crude state..... do.	418		1,763	583	1,763	583	4.....do.	35 84
Indigo..... do.				260		260	94.....do.	686 64
Old and scrap iron..... cwt.	2,795	2,601	1,590	100	3,375	2,961	19.....do.	54 00
Other manufactures of iron not specified.....							19.....do.	659 35
June, Sisal grass, colr, &c..... cwt.	600	2,475		2	600	2,475	19.....do.	38
Japauned leather or skins of all kinds.....								

STATEMENT—Continued.

Species of merchandise.	British possessions in Africa.		Other ports in Africa.		Total.		Duties received thereon.	
	Quantity.	Dollars.	Quantity.	Dollars.	Quantity.	Dollars.	Rate.	Dollars.
PAYING DUTIES AD VALOREM—Continued.								
Oil—								
Whale and other fish, of foreign fishing.....			30,743	15,998	30,743	15,998	<i>all ad valorem.</i>	9,984 97
Essential, expressed or volatile.....		10		524		944	94.....do.....	58 56
Neatfoot and other animal.....			7,647	3,632	7,647	3,632	15.....do.....	544 80
Palm and cocoa-nut.....	76,984	35,943	971,063	340,103	1,048,047	373,944	4.....do.....	14,957 76
Raw hides and skins.....		380,948		886,786		887,634	4.....do.....	921,705 36
Silk, manufactures of, not specified.....				74		74	94.....do.....	17 76
Cloves.....			559,503	68,985	559,503	68,985	4.....do.....	2,489 00
Pepper—								
Black.....			3,708	988	3,708	988	4.....do.....	9 13
Red.....			78,459	3,476	78,459	3,476	4.....do.....	139 04
Ginger, dried, green, ripe, preserved and pickled.....					34,910	1,470	15.....do.....	920 50
Sugar, brown.....		1,470		5,764		5,764	94.....do.....	1,263 36
Tallow.....			168,107	5,764	168,107	5,764	8.....do.....	10 16
Teas, from places other than that of their production.....	150	90	9,376	187	9,526	287	15.....do.....	3 00
China, earthen, porcelain, and stone ware.....		96				96	94.....do.....	6 94
Wine—								
Madeira, in casks.....	730	640			730	640	30.....do.....	192 00
Sherry and St. Leger.....	3,330	2,154			3,330	2,154	30.....do.....	640 90
Wood—								
Ebony.....				880		880	8.....do.....	65 60
Granadilla.....				4		4	8.....do.....	33
Mahogany.....				51		51	8.....do.....	4 08
All other cabinet woods, unmanufactured.....				11		11	8.....do.....	88
Wool, unmanufactured, not otherwise provided for.....	31,950	11,379			31,950	11,379	94.....do.....	9,720 96
Articles not enumerated—								
At 4 per cent.....		1,314		6,891		7,805	4.....do.....	313 90
At 8 per cent.....		5,396		12,111		17,807	8.....do.....	470 40
At 15 per cent.....		19,587		94,698		114,285	15.....do.....	2,704 70
At 24 per cent.....				6,097		6,097	94.....do.....	1,463 96
At 30 per cent.....				4		4	30.....do.....	1 90
Total paying duties.....		406,335		1,611,944		1,480,979		61,569 91
Free of duty.....		413,153		559,973		973,496		
Total.....		819,488		1,571,917		2,389,705		
Number of American vessels entered.....	No. 31	Tons, 8,987	No. 71	Tons, 16,477	Total No., 101	Tons, 98,704		

TREASURY DEPARTMENT, Register's Office, January 27, 1899.

F. BIGGER, Register.

REPORT
OF
THE SECRETARY OF WAR,

COMMUNICATING,

In compliance with a resolution of the Senate, a copy of the topographical memoir and map of Colonel Wright's late campaign against the Indians in Oregon and Washington Territories.

FEBRUARY 16, 1859.—Read, motion to print referred to the Committee on Printing.
FEBRUARY 17.—Report in favor of printing the usual number, and 500 additional copies, for the use of the War Department.
FEBRUARY 18.—Report considered and agreed to.

WAR DEPARTMENT, *February 10, 1859.*

SIR: In answer to the resolution of the Senate of 27th ultimo, I have the honor to transmit herewith a communication from the officer in charge of the Office of Explorations and Surveys, covering "a copy of the topographical memoir and map of Colonel Wright's late campaign against the Indians in Oregon and Washington Territories," by Lieutenant John Mullan, jr., 2d artillery.

Very respectfully, your obedient servant,

JOHN B. FLOYD,
Secretary of War.

Hon. J. C. BRECKINRIDGE,
President of the Senate.

WAR DEPARTMENT, OFFICE EXPLORATIONS AND SURVEYS,
Washington, February 9, 1859..

SIR: I have the honor to transmit herewith the preliminary topographical report of First Lieutenant John Mullan, jr., 2d artillery, acting topographical engineer on the campaign against the hostile Indians in Washington Territory, made by the command under Colonel George Wright, 9th infantry, United States army, called for by resolution of the United States Senate of January 27, 1859.

This report contains useful information, and its publication is therefore respectfully recommended.

Very respectfully, sir, your obedient servant,

A. A. HUMPHREYS,

Captain Topographical Engineers, in charge.

Hon. JOHN B. FLOYD,
Secretary of War.

Preliminary topographical memoir of Colonel George Wright's campaign against the hostile northern Indians in Oregon and Washington Territories, prepared by order of Hon. John B. Floyd, Secretary of War, under the direction of Captain A. A. Humphreys, in charge of Office of Explorations and Surveys, by Lieutenant John Mullan, United States army, acting topographical engineer.

WASHINGTON CITY, D. C., February 8, 1859.

CAPTAIN: I have the honor herewith to transmit a copy of the topographical memoir of Colonel Wright's campaign against the hostile northern Indians in Oregon and Washington Territories, addressed to Lieutenant P. A. Owen, acting assistant adjutant general in the campaign, prepared by order of the Hon. Secretary of War. Accompanying this are maps of the battles of the "Four Lakes" and "Spokane Plains" and a plan of Steptoe's battle field, and a general map, in two sections, of our line of march in the Indian country, from Fort Dalles, Oregon. On leaving Oregon, Colonel Wright authorized me to delay making my report until I reached Washington, and therefore I have officially addressed it to Lieutenant P. A. Owen, and have submitted the whole work to you, in charge of the Bureau of Explorations and Surveys.

I am, sir, very respectfully, your obedient servant,

JOHN MULLAN, *First Lieut. 2d Art'y,*

Acting Topographical Engineer to Colonel Wright.

Captain A. A. HUMPHREYS,

In charge of Office of Explorations and Surveys,

Washington, D. C.

WASHINGTON CITY, D. C., February 1, 1859.

SIR: I have the honor to make the following report for the information of Colonel Wright, commanding expedition against hostile northern Indians, of his march from Fort Dalles, Oregon, to the Cœur d'Alene mission, via Fort Walla-Walla, during the summer and autumn of 1858. Accompanying this report is a map of the country traversed, and every detail of special interest that was necessary to show the movements and plans of the campaign has been faithfully given, together with detailed maps and sketches of each battle-ground, and engagements with the Indians on the march. In the field and office I have met

with the most active, faithful, and cordial co-operation from my assistants, Mr. Kolecki and Mr. Sohon, who, during the whole campaign, were most zealous and untiring in their special departments; and I gladly express my warm thanks to them for their able and valuable assistance.

The country through which we passed was but little known, even to ourselves, with all our means at hand, our only maps being those furnished by Governor Stevens in his exploration for a railroad to the Pacific. But the information there given was not of that character that we could readily adapt to our travelling purposes, as itineraries, &c.; and we were hence compelled to rely mostly upon such reports as guides and friendly Indians could give us.

Our distances were measured by an odometer, positions determined by astronomical observations, bearings by the Schmalcalder compasses, profiles by the barometer, and the variations of the compass determined from camp to camp by observations either at noon, sunrise, or sunset. By direction of the Secretary of War, the data and material thus collected have been carefully arranged and prepared by Mr. Kolecki and myself during the present winter, in Washington, and under the special direction of Capt. A. A. Humphreys, in charge of the Bureau of Explorations and Surveys.

In order that the character of the country and march should be given with minuteness and with strict truth, and with a view that our labors may be the finger-boards, at some future day, for those who may have occasion to retrace our steps, I have had the map prepared on a large scale and the report given in journal form. The value of this will doubtless be appreciated by every military commander who is called upon to operate in that region, where our future Indian wars may yet be waged and where the character of the country is but little known; and as the information relating to it is nowhere else to be found, except in Governor Stevens' published railroad reports, I shall not deem it out of place to give such details as their merits may warrant.

The last detachment of the command that had been called into the field by General Clark, then commanding department of the Pacific, to operate against the hostile northern Indians, left Fort Dalles, under command of Major Wyse, 3d artillery, on the 15th of July, 1858. On the day following, Colonel Unger with his staff and my party of assistants and employés followed, taking the usually travelled route across the Three, Five, and Ten Mile creeks, to the Des Chutes river. The Five and Ten Mile creeks are now bridged, as also the Des Chutes, with strong substantial structures, thus affording a good and easily travelled wagon road, at all seasons, from Fort Dalles to the John Day river. On the night of the 17th of July we encamped at the point known as the Mud Springs, distant from the Dalles 27 miles.

On reaching the Des Chutes river it was both desirable and necessary to procure a good map of the Columbia river thence to Fort Walla-Walla. For this purpose I detached Mr. Sohon, who, taking passage in one of the small sailing craft that ply from the Des Chutes to old Fort Walla-Walla, and provided with the necessary instruments

and material, made a complete and correct map of this stream to the mouth of the Snake or Lewis' river, and still later extended his surveys and examinations to the mouth of the Pelouse and Toukannon.

The estimated distance from the Des Chutes to the mouth of the Snake river is 130 miles. The Columbia, from the Des Chutes to old Fort Walla-Walla, a distance of 119 miles, has been navigated for the last three years by small sailing craft of from 25 to 60 tons. From March to November there is a strong wind blowing up the Columbia almost daily, and from November to March the wind blows down stream; so that sailing vessels with their cargoes, taking advantage of the up winds, navigate the river to old Walla-Walla without difficulty, and there discharging their cargoes descend the river with the current.

But at times it so occurs that the winds give out at the foot of some of the rapids, and the boatmen are often compelled to await a favorable wind, thus rendering the navigation a little uncertain as regards time; and in order to overcome this difficulty it was decided to test the navigation of the river by steam. So in the month of October, 1858, a small steamer, "The Colonel Wright," was launched at the Des Chutes, to run to old Walla-Walla. This experiment to navigate the upper Columbia both by sailing craft and steam vessels is due to the energy of Captain Thomas Jordan, United States army, and Mr. B. R. Thompson, one of the sterling and enterprising business men of the west, who determined to put on the first line of sail vessels to supply the wants of the new military post at Walla-Walla.

The principal rapids that Mr. Schon notes in his trip to old Walla-Walla are the "Five Mile rapids," five miles from the Des Chutes; "John Day's rapids," just below the mouth of John Day's river; "Indian rapids," three miles above the mouth of John Day's; "Squally rapids," eight miles above the mouth of John Day's; "Rock rapids," below the mouth of Rock creek; "Canoe Encampment rapids," six miles above Castle rock, and the "Umatilla rapids," at the mouth of the Umatilla river.

Mr. Schon found the stage of water about ten feet below the high water mark, which last, at an extreme maximum, is sixty feet above the lowest stage.

There is no timber along this section of the Columbia, except at a few points between the Des Chutes and John Day's, on the right bank, but a small growth of willow is found throughout the entire length.

From the Des Chutes navigation is had to the foot of Priest's rapids, about eighty miles above old Walla-Walla, and it is thought by many that steamers can soon stem these rapids and ascend even to the Kettle falls, at Fort Colville.

The whole project of testing the navigation of the upper Columbia by steam commends itself to the earnest and early attention of the general government; and we can only express the hope that the steamer so recently launched for the navigation of this river is only to be the pioneer of the long line of steamers that may yet be seen ploughing the waters of the Columbia from the Pacific ocean to the Rocky mountains.

We found in the valleys of the Three, Five, and Ten Mile creeks a number of flourishing farms, as also in that of the Des Chutes. The mill privileges on the Des Chutes are of the most marked character, and must soon attract the attention of persons who are now looking to that region as the great grazing fields of the northwest.

There is but little timber on these streams, but the soil is fertile and productive. The Mud Springs need improving, and I would suggest that they be dug out and permanent tanks of water be established. These springs are on the left of the travelled route, and as there is no water thence to John Day's river, it is necessary that this shall always become a camping ground. No wood is found here; but a rich abundance of grass, and sufficient water for large bands of stock. Moving early in the morning of July 18, we travelled over an easily rolling prairie to the John Day's cañon, which is a rugged, steep, and difficult rocky defile, running obliquely to the valley of John Day's river. This cañon needs working, although wagons ascend and descend it now with some difficulty.

As there are a number of points along the route from Fort Dalles to Fort Walla-Walla that need improving, and as all the streams during the winter and spring seasons are swollen by the freshets that demand they should be bridged, I would respectfully, but urgently, call attention to the necessity for an appropriation for a military road from Fort Dalles to Fort Walla-Walla, and would recommend that an amount not less than twelve to fifteen thousand dollars be asked for that purpose.

At a distance of nine miles from Mud Springs the road forks, that to the north leading to the mouth of the John Day's, crosses this stream near its mouth, and thence passes along the Columbia, and becomes what is known as the "river road," or "river trail," which throughout most of the distance is not, in its present condition, practicable for wagons, but is a very good pack trail. The road to the south—the better of the two—is the usually travelled wagon route. On this portion of the road fine views are had of the Cascade range, and good bearings to the prominent mountain peaks—Hood, Adams, Jefferson, Rainier, and St. Helen's. Views are also had of the line of the Blue mountains, which seem to belt or girdle the country to the south from the Cascade mountains, eastward. In fact, the Blue mountains seem to be only a long east and west spur thrown out from the Cascade range, just after it crosses the Columbia river.

The John Day's river rises in the Cascade mountains and flows, at the point where we crossed it, through a valley one-quarter of a mile wide, and bounded on either side by high, rounded, prairie clad hills. The stream is, at the crossing, some fifty yards wide, two and a half feet deep, and flowing, with a rapid current, over a rocky, pebbly bed, with banks fringed with the willow, alder, and sage. Its soil is good, and during the past summer gold has been found at several points along its border. Our camp was established on both sides at the crossing, and about one mile below the mouth of Rock creek, which joins it from the east.

On reaching camp we examined a second cañon, half a mile to the

south of John Day's, but, if anything, it was more rugged than it. This stream rises some five feet during the spring and winter seasons, which then renders the route up Rock creek almost impracticable. This necessitates trains, during the freshet, taking the side hills on the east, where the grades are steep, and should be worked, in order to allow heavily laden trains to ascend and descend with facility. Persons travelling to or from Mud Springs should carry drinking water with them, as they find none on the route between these springs and John Day's.

Moving, on the morning of July 19, up the valley of the John Day's, on its right bank, we reached in one mile the Rock creek, ascending its valley by crossing the stream four times, at good fords. This stream is fringed with the willow, alder, and cottonwood, and flows through a winding valley one-fourth of a mile wide, bounded with rounded prairie hills. The valley is rich, covered with luxuriant grass, as are also the hills on either side. Travelling up its valley seven miles, we reached a good camp at an early hour, which enabled us to get a good meridian altitude of the sun, our camp being 54 miles distant from Fort Dalles.

We passed to-day a number of pretty farm sites. On the morning of 20th July, at an early hour, we left Rock creek, and gaining an open basin or alkaline bottom one-fourth of a mile wide, and lined on either side by low hills, we kept up it, reaching in $2\frac{1}{2}$ miles a few scrub cedar that here mark the Cedar or Juniper Springs.

Here is a small alkaline bottom soil, poor, and with the exception of a few cedar, no timber whatsoever is found. Crossing a series of low rolling prairie hills, occasionally passing small groves of cedars on the right and left of the trail, finding rich and luxuriant grass at every point. At a distance of 14 miles from Rock creek, we reached a high table-land, which we followed for three miles, when we began the descent of a cañon leading to the valley of the Willow creek. This cañon is not very difficult, but still needs working.

The valley of the Willow creek is a half mile wide, well grassed, and bounded by rolling prairie hills. The stream is fringed with willow, alder, and distant from John Day's 20 miles.

We made our camp on its right bank, with good grass, wood, and water. Took here good observations for latitude and time. At this season the water in this creek is not running, but stands in large deep pools, which being well shaded, the water is cool and refreshing.

The soil of the river bottom is a rich black loam. The stream rises in the low spurs of the Blue mountains, and empties into the Columbia; with its fine soil, good climate, and luxuriant grasses for miles around, it must, at no distant day, be the site of flourishing farms. There is not much timber at present in the valley, yet sufficient for all practical purposes.

Leaving our camp on this creek at an early hour on the 21st, we passed through a narrow valley, lined on either side by low prairie hills, when we once more reached the high table land, which we followed for thirteen miles to a point known as the Upper and Lower Well Springs; but not finding sufficient water for our large trains we

moved on toward Butter creek, a small tributary to the Umatilla river, and distant thirty miles from Willow creek. Having travelled twenty-eight miles over a rolling prairie, we came in view of the valley of the Umatilla, fringed with beautiful groves of cottonwood, and could see far in the distance the Ross and McKenzie's peaks, opposite to old Fort Walla-Walla, that rear their heads as landmarks in this immense ocean of prairie.

The Blue mountains also to-day assume a bolder and better defined outline, and we were thus enabled to mark, somewhat accurately, a number of the more prominent peaks, in order to approximate to the true position of the range. We passed to-day, twenty-five miles distant from Willow creek, the battle field of the Oregon volunteers and the Cayuse Indians. A fight occurred here in 1847, after the massacre of Dr. Whitman and his family, in the Walla-Walla valley, at the hands of the Cayuse and Walla-Walla Indians.

As an account of the massacre of that unhappy family has never, so far as I know, found place on official records, I trust it may not be deemed out of place to here insert it. The position of the battle field is marked on the map.

The story of the massacre is familiar to the early settlers of Oregon, and stands among the first of atrocious acts left unpunished and for which these savages have been never made to atone.

Dr. Whitman was a Methodist missionary, who with his family crossed the plains in 1838, and who, encountering all the dangers and suffering all the privations and vicissitudes of a long overland journey, which at that day was an undertaking of much severity, reached the waters of the Pacific and chose the beautiful valley of the Walla-Walla as the scene of his mission labors.

Here, with a creditable zeal and industry, he established his mission home among the Cayuse, Walla-Walla, and some minor fragments of tribes living along the Columbia river. He found his mission field overgrown with thorns and thistles, but not awed by the difficulties that environed his pathway, he applied himself diligently, and in a short time instead of thorns the shoots of civilization put forth, bloom, blossom, and bear fruit for many seasons, both to his own gratification and for the advancement of the ruddy savage in whose midst he had pitched his tent. Soon fields are enclosed, the sod turned, dwellings, mills and workshops erected, and a school house and church point as finger-boards to volumes of which, as yet, they could not, in the dawn of their improvement, appreciate or read a first chapter. The hum of busy, happy, and zealous settlers, make the beautiful valley of the Walla-Walla ring with joyous and gladsome sounds; and with it all woman was not absent, but her presence here was necessary to lend her mild and softening influence to a scene already redolent with material that would bring gushing tears to the eyes of a Howard, and cause philanthropists generally to point with eager pride to the fruits of their endeavors.

Under the guiding hand of this successful missionary a beautiful home is soon had for his newly made wards, and the horizon looked clear; not even a passing cloud seemed to deck it that might

portend a fast approaching storm. But alas for the credulity of those who implicitly rely in the faithfulness of savages! Under the guiding hand of destiny, it so chanced that the red man was not exempt from the effects of a scourge that was then sweeping over the land. The small-pox, in all its hideous forms, made its appearance among them, and like so many bands of sheep they died by the wayside. The zealous missionary found himself sadly, but still industriously occupied at the bedside of those whom he was now disposed to regard in the light of children. His charming wife, too, acted as another Florence Nightingale, and by day and by night was not absent; but with cooling draught and words of consolation passed as an angel of mercy through these numberless, outstretched, dead and dying savage heathens, and many were saved that must have otherwise perished without succor.

But whilst these things were being enacted the superstition of the Indian is not dormant, but moves restlessly and actively on, till it ends in a tragedy that might chill the blood as it flows smoothly on, even from the hearts of those who stand boldly and prominently forward as advocates of the much abused savage.

The suspicion is had that it is the noble missionary who has been instrumental in bringing this plague in their midst, and it is suggested that a practical test be had to confirm the truth of these suspicions, to which universal agreement is had. It was designed to send two men, the one already afflicted, and the other, as they thought, not yet touched by the malady, in order that the missionary should prescribe for both. It is done, and they both return to their people to await the issue.

Some strange destiny, inexplicable to us, has determined that both shall die. The suspicion of the Indians is confirmed; the noble missionary is believed to be the cause of the raging plague, and the medicines intended to relieve their pains only hasten their death, and thus his fate is sealed. In secret they plan his death and that of his whole family. An opportune occasion arises to execute their already matured plans. At a still hour of the night, when the happy family had rested from their labors and were now reposing in peaceful slumber, not dreaming that the shadow of danger and death was flitting around their dwelling, a stalwart savage, chosen for his boldness and ferocity, armed with tomahawk, stealthily enters the chamber of the happy pair, and planting a death-dealing blow in the brain of each sends them without a struggle to a bar of judgment. Their helpless babes, males and female employés, are next slaughtered—brutally butchered—the house and tenements razed to the ground, fences torn down and destroyed, and every vestige of a once happy home caused to disappear.

A number of emigrant women, whom a late cold season had overtaken while *en route* for the Willamette from the States, and who found themselves under Whitman's roof occupying menial positions, had been saved from the general massacre, but only to become victims to the ruthless passions of a band of now frantically enraged savages,

who, not yet content with blood, have determined to retain these women as prisoners for their own base purposes.

Thus was enacted a tragedy that might well chill the blood of the warmest advocate of the Indian. But those nigh at hand were not callous regarding an act that might, if left unpunished, be soon re-enacted, with even greater ferocity, in their midst; and with a determination as worthy as it was immediate, the brave Oregon volunteers were called into the field, and, after an unsuccessful attempt, were compelled to retreat into the Dalles, and thus left unpunished an act of the veriest brutality that marked the first settlement of that distant country.

But, to continue a description of the country, having travelled a distance of thirty miles, we reached and encamped upon Butter creek, which flows through the western portion of the Umatilla valley and joins this stream some eleven miles from the point where we encamped upon it.

Seen in the distance, the Umatilla truly presented to-day a pleasant relief to our dull and monotonous march across the prairie. The Umatilla rises in the Blue mountains and flows north through a valley of extreme fertility, of from four to six miles wide, lined on either side with thick groves of cottonwood and bounded on the east and west by low well grassed prairie hills. The stream is thirty yards wide, rapid current, gravelly bottom, and good banks on either side, and empties into the Columbia about twenty-five miles below old Fort Walla-Walla. During the freshet it rises some five or six feet, and should be bridged. There is an abundance of good bridging material along its border near at hand. The Butter creek should be also bridged; the timber for which could be carried from the Umatilla, only nine miles distant.

The valleys of these two streams hold out many inducements to settlement, and will support a large population. Leaving the Butter creek on the morning of the 22d of July, we reached and crossed the Umatilla river. At its crossing are to be seen the ruins of Fort Henrietta, built by the volunteers in 1856, and so called in honor of the charming lady of Brevet Major Haller, of the United States army. Following up the right bank of the Umatilla for five miles, we reached what is called the corral, where we encamped for the night, finding good grass and an abundance of fuel, the stream being throughout thickly timbered with the cottonwood. Our distance to-day was fourteen miles from Butter creek, enabling us to make camp in good season for a meridian altitude of the sun. At our night's camp we were joined by Lieutenant Gibson, 3d artillery, who, having been left behind with one of the trains, confirmed the report brought to us yesterday that some of our draught animals had been run off by the Snake Indians, who were now in the country warring against the Cayuse and Umatillas.

We left our camp on the Umatilla early on the morning of the 23d of July, and travelling a distance of seventeen miles along its right bank, and over an easily rolling prairie, encamped again on the same stream at the forks, just above McCoy's agency, obtaining here also

a good latitude. To our right to-day, and along the hills to the west of the Umatilla, we could trace the line of the old emigrant road from the States that crosses the Blue mountains between the forks of the Umatilla. A number of settlements have been made in the valley of the Umatilla, but the Indian disturbances have been of such a character as to destroy that feeling of security so essential to permanent settlements and pleasant homes. At the forks of the Umatilla is the site of the old agency under McCoy, where abundant crops have been raised, and I am confident that a hardy and dense population must at no distant day occupy this fertile and extensive valley. Excellent grazing and fuel at our camp to-day.

Leaving the Umatilla on the morning of the 24th, and travelling eastward over an easily rolling prairie, in 17½ miles we reached the valley of the Wild Horse creek, a stream that flows through a low, rich, beautiful prairie bottom, well grassed, and the stream at points fringed with clumps of cottonwood. Our camp was only a few yards distant from the grave of the man who, a few days before, was brutally butchered by the Walla-Walla Indians, and to whose body was given sepulture by a detachment of dragoons under Lieutenant Pender, 1st dragoons. The murderers, at a later day in our campaign, expiated their offence upon the gallows.

Leaving the Wild Horse creek on the morning of the 25th of July, we continued over the easily rolling prairie country eastward for Fort Walla-Walla. Gaining the end or crest of the high table-land we enjoyed the magnificent panorama of the Walla-Walla valley that lay at our feet. To our right lay the bold ridge of the Blue mountains; in front the ocean of prairie, beyond which flowed the waters of the Snake river; while to our left was seen the line of the Columbia as it traced itself from point to point by the bluffs and buttes that defined its course; while within their limits lay embosomed the beautiful valley of the Walla-Walla, with the stream of the same name, with its hundreds of feeders pouring down from the mountain sides, flowing midway through the valley; while far in the distance the marks of civilized abodes, and clouds of dust raised by countless herds, bespoke our approach to thriving settlements.

The valley of the Walla-Walla may be regarded as one of the most fertile, as it is one of the most extensive, in this whole region. The river of the same name rises in the main range of the Blue mountains, and, flowing almost due west, receiving as it winds through the valley a number of considerable tributaries and feeders, each flowing through fertile bottoms, and empties into the Columbia at old Fort Walla-Walla.

The principal streams flowing into the main river are the Touchet, Mill, and Dry creeks. On all these streams, as also the main branch, are established a number of rich and flourishing farms. Mill privileges exist at every convenient point; the streams are all wooded with the cottonwood, willow, and alder; while the slopes and summits of the Blue mountains furnish the finest of pine timber. The valley, if properly cultivated, together with the cultivable section tributary to it, will support a population of not less than 15,000 people.

During the afternoon we reached our camp in the valley, which was on the Mill creek, and midway between new Fort Walla-Walla and the dragoon cantonment. The new post of Walla-Walla is on the Mill creek, in latitude 46° —, longitude —, and $29\frac{1}{2}$ miles east of old Fort Walla-Walla, the latter having been the trading establishment of the Hudson's Bay Company, and now the site of the agency of the quartermaster's department. We remained at our camp in the valley from the 26th of July until the morning of the 7th of August, organizing, equipping the command that was now about to operate against the hostile Indians. During the interval we availed ourselves of the occasion of the movement of one of our supply trains going to old Walla-Walla to accompany it, in order to make a map of the valley and to connect our work with that made by Frémont and Wilkes, especially in getting our position of old Walla-Walla to compare with theirs.

Before leaving Walla-Walla Colonel Wright sent couriers and expressmen to all the friendly Nez Percés, with instructions to meet him in council at the fort, in order that he should lay before them his wishes in their case, and to assure them, as long as their fealty was pure, that they should be protected by the strong arm of the government.

On the morning of the 4th of August, under their chief, "The Lawyer," assisted by Hutes-e-mah-li-kan, Captain John, Joseph, Speaking Eagle, Eagle from the Light, and a number of other sub-chiefs, a large delegation assembled under an arbor prepared on the council ground, when the colonel addressed them in kind but decided and positive terms, setting before them their duty, and what he should expect at their hands. Several speeches having been made by the chiefs, some thirty of these Indians volunteered to accompany the command against the hostile Indians. The accompanying sketch, made by Mr. Schon at the time, represents the Nez Percés in council.

Having completed our arrangements by the morning of the 7th of August, the first detachment of the command moved under Captain Keyes for the Snake river, there to select a crossing and choose a site for constructing a field-work in order to guard it, and, at the same time, keep open our communication with the post of Walla-Walla. We moved up the valley along the Mill creek, crossing it at the ford at the dragoon cantonment, and following it for six miles, on its right bank, we turned to the north, crossing a low prairie separating the bottom of the Mill from that of the Dry creek, and on an excellent wagon road at eight miles from the post we reached our camp upon Dry creek, finding good grass, wood, and water, which last is not running at this season but stands in shaded pools in the river bottom.

Resuming our march on the morning of the 8th, up the right bank of the Dry creek, we entered a small prairie bottom, following it for three miles to some springs which would afford a good camping ground.

On our second day's march from Walla-Walla, travelling over a comparatively easy road for eight miles, we reached the Kap-pe-ah, a small tributary to the Touchet, and flowing through a pretty valley.

Following the valley of this stream and crossing it, we reached the Touchet, which we crossed, and upon which, two miles from the crossing, we encamped. The valley of this stream is of great fertility and well wooded.

The stream at this season is about thirty yards wide and flows with a rapid current over a pebbly bed. The pine and cottonwood are found upon its borders.

Moving on the morning of the 9th, continuing still over a rolling prairie country, at a distance of three miles, we reached the small stream of Reed creek, which, rising in the prairie hills, flows through a flat prairie bottom, and, at this season, sinks into the ground; but during the spring flows into the Touchet. Finding our teams quite heavily laden, and the road needing work, we made to-day only eight miles, encamping upon the Reed creek near its head; finding here good grass and water, but only a small quantity of fuel, as no timber, save a few small willows, is found on its border.

On our returning to Walla-Walla our party followed down the valley of the Reed creek to its junction with the Touchet, which they found afforded a better road than the one we had followed southward, and which was surveyed by Mr. Kolecki. He regards it as affording a better route for our proposed military road, avoiding all steep ascents and descents.

Moving early on the morning of the 10th, we continued over the rolling prairie, gaining at a distance of four miles the high table land whence we could see the country for miles on either side of the Snake river, which, being now burnt over by the Indians, with denuded basaltic rocks, presented an appearance of sad desolation. Travelling a distance of eleven miles from the Reed creek, we struck the Toukannon three miles above its junction with the Snake river, finding an excellent wagon road. The Toukannon rises in the prairie hills, and, flowing west and northwest through a prairie valley half a mile wide, and bounded by prairie hills, discharges itself in the Snake river three miles above in the mouth of the Pelouse.

It receives one tributary from the east-northeast, called by the Nez Percés the Pah-tah-hat. The Toukannon, as also the Touchet, is an Indian name; in fact, most of the streams have Indian names, which I have adopted in preference to others, as they are not only very often very characteristic, but they often serve to retain and hand down to the latest time Indian traditions that are worthy of being preserved. Reaching our camp on the Toukannon at an early hour, Captain Keyes sent me, with a small mounted detachment, to proceed down the stream to its mouth, and examine it, as also the mouth of the Pelouse, as to the feasibility of the crossing of the Snake river and the general character of the country, and at the same time ascertain which afforded the greatest advantages in the selection of a site for a field-work. Finding the crossing at the mouth of the Toukannon good, wood and grass in abundance on its banks, my preference was given to it, which Captain Keyes, the next day, upon a personal examination, confirmed, and which he selected as the site of "Fort

Taylor," so called in honor of the lamented Captain Taylor, who fell in Steptoe's battle of May 17, 1858.

The command resting in camp on the banks of the Toukannon during the morning of the 11th, when a more detailed reconnaissance was made of the ground below, and a good wagon road opened down the Toukannon to its mouth, under the general direction of Lieutenants Morgan and Kip, 3d artillery, and every preparation made to commence our work on the Snake river.

The command moved to the banks of the Snake river on the afternoon of the 11th, where they remained engaged in building Fort Taylor, and awaiting supplies and reinforcements, until the morning of the 27th.

The accompanying plans and sketches may serve to give a correct idea of Fort Taylor, as well as the character of the country on the Snake river at the mouth of the Toukannon.

The work was built of the basaltic rock formed on the banks of the river, with hexagonal bastions of alder at the two diagonal corners, and under the direction of Major Wyse, 3d artillery, who, with his company, worked assiduously till it was completed. He was assisted from time to time by detachments of the other companies of the 3d artillery, working under charge of the company officers of that regiment. It was sufficiently large to be garrisoned by one company, and to contain all the stores left by our command.

The valley of the Toukannon, at its mouth, is half a mile wide, and bounded by the high basaltic bluffs that we named "Taylor" and "Gastin," the one to the west being called "Taylor." The Snake river, at the same point, is 275 yards wide; very deep, rapid current, but the crossing is good.

Captain Kirkham having built a large flat at this point, and with his boats, transported from Fort Walla-Walla, we were enabled to establish a ferry without difficulty. This field-work and ferry at the end of the campaign, were placed in charge of Slonarchey, a Pelouse chief, who had remained friendly during the war. A number of incidents, on the part of both friendly and hostile Indians, occurred while we lay at Fort Taylor, that served to break the monotony of camp life. While camping here we were enabled to determine quite accurately the position of Fort Taylor, and, by direction of Colonel Wright, we laid out a reservation of 640 acres up the valley of the Toukannon, which the accompanying plan will illustrate.

The command that now composed our column to operate against the hostile Indians was composed of four companies of 1st dragoons, under Major Grier; five companies of 3d artillery, under Captain Keyes; two companies of 9th infantry, under Captain Dent; and thirty friendly Nez Percés Indians, under Lieutenant Mullan—the whole under command of Colonel Wright; Major Wyse, with his company "D," having been left to garrison Fort Taylor.

All arrangements having been made and perfected by the morning of the 25th of August, Colonel Wright moved his command across Snake river without loss or accident, the crossing taking place under the personal supervision of Captain Kirkham, which occupied the

greater portion of the 25th and 26th, when, taking up our march on the 27th, we followed down the right bank of Snake river till, reaching the mouth of a cañon and crossing it, we began the ascent of the high bluffs which here formed the southern edge of the table-land lying between the Snake and Pelouse rivers. From the top of this table-land we had a fine panoramic view of the country, which to our front and right was a swelling prairie, while that near and along the Pelouse and Snake rivers was barren and rugged.

Large basaltic columns bounded the Pelouse on either side, while large beds of basalt capped the crests and tops of the hills for miles around. The road, however, passed over a well grassed prairie for three miles, when another cañon is reached. Heretofore, to avoid this cañon, the Indians have descended into the valley or cañon of the Pelouse, but this road is rocky and difficult. By travelling a quarter of a mile towards the east, we were enabled to cross this cañon quite easily, and thus once more gain the table-land, which gave us a good road for thirteen miles, when we came once more in sight of the Pelouse, which, from its mouth to within two miles of where we struck it, was to our left and from one to two and a half miles distant, and flowing through a black, broken, columnar basaltic dalle or cañon. To the west of this cañon of the Pelouse was a second and equally large one known as the cañon of the Cheranno, up which passes another trail leading to Fort Colville, and which was followed by Captain McClellan, United States engineers, in 1853, returning to Fort Dalles. This stream, as represented by him, drains a lake which the Indians call the Sil-kat-koon (?) and which joins the Pelouse nine miles above the mouth of the latter. It passes through the same black dreary region that characterizes the Pelouse near its mouth. Having travelled a distance of thirteen miles, we again came in view of the Pelouse proper, which before, although distinctly marked by its cañon, still could not otherwise be seen. It here flows through a valley a mile broad of rich prairie bottom; it is from thirty to forty yards wide and fringed on either side with willow, affording sufficient fuel for our camping purposes. The stream flows over a rocky and stony bed, with low banks, a rapid current, water now only a foot deep. The hills on the north and south are low rounded prairie bluffs or buttes, from which the basalt, in many places, is seen outcropping. The bottom of the valley is covered with rich and luxuriant grass, and a number of Indian farms at its different points bespeak its agricultural capacity.

The day was hot and dusty, and our men, in consequence, suffered severely. On the morning of the 28th August we left the Pelouse, and moving northward across its valley in a quarter of a mile reached the valley of the Cow creek or Stcap, up which we travelled for six miles, encamping at the end of this distance on its left bank.

This stream, at this season, is a small willow run, flowing through a low bottom a quarter of a mile wide and fringed with willow, which increases in size as you ascend it. Beds of basalt outcrop from the hills that bound its valley on either side; at this season it sinks into the ground, about two and a half miles north of the Pelouse; but

during the spring it joins this stream just below our camp of yesterday; good camps are found at any point of the valley, with wood and grass. The route is an easy, practicable wagon road, the first four miles passing over a well grassed plateau, on the west bank of the creek, with high rolling prairie hills to the left. Good observations for time and latitude were made at this camp. No hostile Indians in sight as yet, but the many fresh tracks of their horses show that we are fast approaching their strongholds.

The character of the country now burnt over, with accounts and appearances from all quarters that it so continued for miles to our north, with the possibility of scanty supplies of water for our trains, the lateness of the season, and the unknown rendezvous of the Indians, all caused the colonel, at this point, to hesitate and consider which route he should pursue, that direct towards the Colville crossing of the Spokane, or that to the eastward near the Falls. With the facts before him he determined upon the latter; and the wisdom of his judgment was afterwards shown as it led us into the camps of the Indians, brought about the battles of the 1st and 5th September so signally won, and was the means of putting an end to the Spokane war.

Resuming our march, therefore, on the morning of 29th August, over the hills to the east of our camp, in one and a quarter mile we reached again the high table-land, where we met the old wagon tracks of Gibson's train, made in 1854, which we followed for six miles, reaching a small spring flowing from the basaltic rocks along the side of the hills, which here forms a basin shaped depression, lined on either side by basaltic rocks. Here we halted to rest the command. From this point our march lay up a basin some three miles broad, bounded on either side by detached prairie buttes; the road in places passing over masses of black basaltic rock. The route, however, was good, and with a little risk is practicable for heavily laden wagons.

Springs of water occur along the line at six, thirteen, and nineteen miles from the Cow creek; a number of small lakes are also passed on the road. Our camp, being on one of these at a small grove of small aspen trees, received the name of the "aspen camp." Our distance travelled was 19.8 miles, good road, with excellent grass, fuel and water at night. No hostile Indians in sight during the day.

Leaving the aspen camp early on the morning of the 30th, the trains passed over the bed of a small lake now dry, and travelling eastwardly for a mile and a quarter, struck the old wagon trail made in 1855 by the late Indian agent Bolen. This we followed for six miles to a spring, where commences a basin some eight miles broad and limited on either side by high rolling prairie hills. In places it is somewhat rocky, but still practicable for wagons.

Halting here to rest our train, we moved on for six and a half miles to a number of small springs, thence our road became somewhat more difficult and rocky. In three miles more we reached a singular formation of basalt, which formed a defile at the trail a quarter of a mile wide and rising fifty feet above us, and broken off at different points, the whole formation looked not unlike the Giant's Causeway. Leaving this defile, we emerged into a broad, beautiful prairie, in which

at many points were small clumps of brushwood, indicating the presence of water.

Crossing this prairie, that extended far to the east and west, we descended into a lower and still more rocky basin, through which we travelled four miles, camping at a small lake surrounded by brush and bushes. On the march we passed a small deep lake, along the edges of which was growing a wild parsnip, from the eating of which two of our men died. Our camp afforded us good grass, wood, and water, but in a military point of view it placed us at great disadvantage. But necessity compelled us to halt here, as we could tell nothing of the character of the country in advance of us; and no better place had been reached on the march, and having travelled eighteen miles we halted and encamped.

But no sooner was camp formed before two friendly Indians rode in, informing us of the presence of the hostiles in the timber above us. Soon the discharge of rifles told that our picket guard had been fired upon, and the Indians now were making down in numbers from the hills to our east. *Boots and saddles* is sounded, and a squadron of dragoons, under Major Grier and Lieutenant Gregg, and the foot troops, under their respective commanders, all under the personal supervision of the colonel, moved forward to the attack; and after exchanging shots and a charge of three miles, drove the Indians from the field.

The pedigree formation here, however, was very difficult, compelling a guard of near one-half the command to be mounted to keep the camp in a state of proper defence. It had been our intention to rest here on the 31st and to muster, but finding the country forbidding, and the pedigree formation difficult for the horse and foot to operate, we determined to resume our march the next day.

We had now entered the pine region which marks the northern portion of the Great Spokane Plain or plateau. The highest point of this plateau is about twenty-five miles south of the Spokane river, lying along the southern portion of the river of the same name.

Our march of the 31st of August continued over the same character of formation in which we had made our camp, which extended either side to some two miles, and limited by lines of rolling prairie hills. Some of the small cañons to our right and left were rugged and difficult, and densely clad with the pine and undergrowth, that afforded our enemies murderous and dangerous ambushes.

The character of the country becoming somewhat easier at the end of five miles, we reached a broad deep lake, embosomed within basaltic walls from fifty to one hundred feet high, which we named the Walled Lake. From this point our road continued to ascend gradually for a mile, when we reached the highest point of the plateau, which for some miles northward is so generally level that the water falling upon it is received in a number of small lakes, many of which we passed along the route. As seen from the summit of this plateau, the country to the right was a rolling prairie, with a few pine trees scattered here and there, while that to the left presented long skirts of timber, and in places rocky. Having travelled ten and a half miles,

to the bed of two small lakes, now quite dry, the enemy made his appearance on the hills to our east, not so much with the intention to give us battle, as acting as the advanced spies for the main body, and were sent out to watch our movements, with a view of keeping their people posted.

Still, as they were in considerable force, the precautionary steps were taken by the colonel to give them battle; but not approaching us nearer than their look-out points, we moved on through the timber, and at 12 $\frac{1}{4}$ miles reached a small spring, on the right of the trail, in a small willow thicket, that afforded us a refreshing drink. From this point we continued for six miles through the open pine forests, occasionally passing along the edges of small open prairies.

When leaving the pines we entered upon the edge of a gently rolling prairie at a small pond, where we made camp for the night. This is the commencement of what may be called the Upper Spokane Plain proper.

During the entire day the hostile Indians appeared on the hills to our right, and increasing in numbers; about 4 p. m., while the friendly Nez Percés were spying the country from the hill-tops, they were charged by the enemy, and must have necessarily been overpowered, had not the colonel, who, seeing it, immediately despatched a strong squadron of dragoons, under Major Grier and Lieutenant Davidson, to the rescue, who drove them from the field.

The march being resumed, the Indians again began to annoy us by attacking the rear of our column, but prompt and energetic preparation being made to receive them by Captain Keyes, then commanding at the rear, by throwing out flankers on either side, who repulsed them and drove them again from our line. Our column now moved quietly on to our camp, where we mustered and rested for the night.

During the day the grass was set on fire at many points, but which did not extend to our camp. On the morning of the 1st of September the enemy again appeared on the hills in increased force, and evidently, from signs and demonstrations, anxious to fight. The colonel determined to give him battle, which was done, and which, having been described in detail by the colonel, is set forth in his official report, and which is here appended, being extracted from the published reports of the Secretary of War. So far as the character of the ground and the different positions are concerned, the accompanying map, made at the time, sufficiently explain.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp at the "Four Lakes," W. T., 121 miles north of
Fort Walla-Walla, August 31, 1858.

SIR: A severe storm prevented my crossing the Snake river on the 23d and 24th, but on the 25th and 26th I made the passage with my entire command, without loss or accident, and encamped on the right bank of the river with five hundred and seventy regulars, thirty friendly Nez Percés, one hundred employés, and eight hundred animals of all kinds, with subsistence for thirty-eight days. I left Brevet Major Wyse, with his company "D," 3d artillery, to occupy

Fort Taylor, protect the stores and boats, and keep open our line of communication.

Marching from Snake river on the morning of the 27th, our route lay over a very broken country for a distance of fourteen miles, where we struck the Pelouse river, and encamped on its right bank. Resuming our march on the 28th, I halted, after a march of six miles and a quarter, at a point where the trail divides—that to the left leading to Colville direct, and that to the right more to the eastward. After consulting our guides, and examining our maps and itineraries, I determined to march on the trail to the right; accordingly, on the 29th, we advanced; the country presented a forbidding aspect; extensive burnt districts were traversed, but at the distance of twenty miles I found a very good encampment, with sufficient grass, wood, and water. Up to this time we had *seen* no hostile Indians, although Lieutenant Mullan, my engineer officer, with our eagle-eyed allies, the Nez Percés, had been constantly in advance, and on either flank; *signs*, however, had been discovered, and I knew that our approach was known to the hostiles.

Advancing on the morning of the 30th, occasionally a few of the enemy were seen on the hill-tops on our right flank, increasing during the day, and moving parallel with our line of march, but too remote and too few in number to justify pursuit. After marching eighteen miles I encamped, and about 5 p. m. the Indians approached our pickets, and a sharp firing commenced. I immediately moved out with a portion of my command, and the Indians fled; I pursued them for four miles over a very broken country, and then returned to camp at sunset. All was quiet during the night, and at 6 this morning we were again on the march. Soon the Indians were seen in small parties at the distance of two or three miles on the hills, and moving as yesterday, with their numbers gradually increasing, and occasionally approaching a little nearer, but I did not deem them worthy of notice, only taking the precaution to halt frequently and close up our baggage and supply trains as compactly as possible. Our march this day was ten miles longer than we anticipated, and for a long distance without water; and, at two miles from this camp, the Indians made a strong demonstration on our supply train, but were handsomely dispersed and driven off by the rear guards, and infantry deployed on either flank.

My men and animals require rest; I shall remain here to-morrow; I have a good camp, with an abundance of wood, water, and grass.

The Indians, in considerable numbers, have been assembled on a high hill, about three miles distant, ever since we encamped, about 4 p. m., until now, 7 p. m., when they have retired. I shall look after them to-morrow, after my men have had a night's rest.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Asst. Adjt. Gen., Headquarters Department of the Pacific,

Fort Vancouver, W. T.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp at the "Four Lakes," W. T., lat. 47° 32' N.,
Long. 117° 39', September 2, 1858.

SIR: I have the honor to submit the following report of the battle of the "Four Lakes," fought and won by the troops under my command on the 1st instant. Our enemies were the Spokane, Cœur d'Alenes and Pelouse Indians.

Early on the morning of the 1st I observed the Indians collecting on the summit of a high hill, about two miles distant, and I immediately ordered the troops under arms, with a view of driving the enemy from his position, and making a reconnoissance of the country in advance. At half-past 9 a. m. I marched from my camp with two squadrons of the 1st dragoons, commanded by Brevet Major W. N. Grier; four companies of the 3d artillery, armed with rifle muskets, commanded by Captain E. D. Keyes; and the rifle battalion of two companies of the 9th infantry, commanded by Captain F. T. Dent; also one mountain howitzer, under command of Lieutenant J. L. White, 3d artillery; and thirty friendly Nez Percés Indian allies, under command of Lieutenant John Mullan, 2d artillery. I left in camp all the equipage and supplies, strongly guarded by company "M," 3d artillery, commanded by Lieutenants H. G. Gibson and G. B. Dandy; one mountain howitzer, manned; and, in addition, a guard of fifty-four men, under Lieutenant H. B. Lyon; the whole commanded by Captain J. A. Hardie, the field officer of the day.

I ordered Brevet Major Grier to advance to the north and east around the base of the hill occupied by the Indians, with a view to intercept their retreat when driven from the summit by the foot troops. I marched with the artillery and rifle battalion and Nez Percés to the right of the hill, in order to gain a position where the ascent was more easy, and also to push the Indians in the direction of the dragoons. Arriving within six hundred yards of the Indians, I ordered Captain Keyes to advance a company of his battalion deployed, and drive the Indians from the hill. This service was gallantly accomplished by Captain Ord and Lieutenant Morgan with company "K," 3d artillery, in co-operation with the 2d squadron of dragoons under Lieutenant Davidson; the Indians were driven to the foot of the hill, and there rallied under cover of ravines, trees, and bushes.

On reaching the crest of the hill I saw at once that the Indians were determined to measure their strength with us, showing no disposition to avoid a combat, and firmly maintaining their position at the base of the hill, keeping up a constant fire upon the two squadrons of dragoons, who were awaiting the arrival of the foot troops. In front of us lay a vast plain, with some four or five hundred mounted warriors rushing to and fro, wild with excitement, and apparently eager for the fray; to the right, at the foot of the hill, in the pine forest, the Indians were also seen in large numbers.

With all I have described, in plain view, a tyro in the art of war could not have hesitated a moment as to his plan of battle.

Captain Keyes, with two companies of his battalion, commanded by Lieutenants Ransom and Ihrie, with Lieutenant Howard, was ordered to deploy along the crest of the hills, in rear of the dragoons, and facing the plain. The rifle battalion, under Captain Dent, composed of two companies of the 9th infantry, under Captain Winder and Lieutenant Fleming, was ordered to move to the right, and deploy in front of the pine forest; and the howitzers, under Lieutenant White, supported by a company of artillery, under Lieutenant Tyler, was advanced to a lower plateau, in order to gain a position where it could be fired with effect.

In five minutes the troops were deployed; I ordered the advance; Captain Keyes moved steadily down the long slope, passed the dragoons, and opened a sharp, well-directed fire, which drove the Indians to the plains and pine forest; at the same time Captain Dent, with the rifle battalion, Lieutenant White, with the howitzer, and Lieutenant Tyler, with his company, were hotly engaged with the Indians in the pine forest, constantly increasing by fugitives from the left.

Captain Keyes continued to advance, the Indians retiring slowly; Major Grier, with both squadrons, quietly leading his horses in rear. At a signal, they mount, they rush with lightning speed through the intervals of skirmishes, and charge the Indians on the plains, overwhelm them entirely, kill many, defeat and disperse them all; and in a few minutes not a hostile Indian was to be seen on the plain. While this scene was enacting, Dent, Winder, and Fleming, with the rifle battalion, and Tyler and White, with company "A" and the howitzer, had pushed rapidly forward and driven the Indians out of the forest beyond view.

After the charge of the dragoons, and pursuit for over a mile on the hills, they were halted, their horses being completely exhausted; and the foot troops again passed them about a thousand yards, but finding only a few Indians in front of us, on remote hill-tops, I would not pursue them with my tired soldiers. A couple of shots from the howitzer sent them out of sight. The battle was won; I sounded the recall, assembled the troops, and returned to our camp at 2 p. m.

It affords me the highest gratification to report that we did not lose a man, either killed or wounded, during the action—attributable, I doubt not, in a great measure, to the fact that our long-range rifles can reach the enemy where he cannot reach us.

The enemy lost some eighteen or twenty men killed, and many wounded.

I take great pleasure in commending to the department the coolness and gallantry displayed by every officer and soldier engaged in this battle.

1. Brevet Major Grier conducted his squadron with great skill, and at the decisive moment, after Captain Keyes had driven the Indians to the plain, made the most brilliant, gallant, and successful charge I have ever beheld. The major commends particularly the coolness and gallantry of Lieutenants Davidson, Pender, and Gregg, each in command of a troop, for the handsome and skilful manner in which they brought their men into and conducted them through the fight.

The major also speaks in the highest terms of Assistant Surgeon Randolph, who was with the second squadron during the action, exhibiting great coolness and courage, and ever ready to attend to his professional duties. Major Grier also reports the following named men of his squadrons as having been mentioned by their company commander for distinguished conduct.

"C" troop, *first dragoons*.—First Sergeant James A. Hall, Sergeants Bernard Horton and Patrick Byrne, bugler Robert A. Magan, and privates James Kearney and Michael Mearda.

"E" troop, *first dragoons*.—First Sergeant C. Goetz, Sergeant J. F. Maguire, and privates J. G. Trimbell, J. Buckley, William Ramage, and F. W. Smith.

"H" troop, *first dragoons*.—First Sergeant E. Ball, Sergeant M. M. Walker, and bugler Jacob Muller.

"I" troop, *first dragoons*.—First Sergeant William H. Ingerton and Sergeant William Dean.

Lieutenant Davidson reports of First Sergeant E. Ball: "I saw him charge upon some Indians, unhorse one of them, dismount himself and kill him."

2. Captain E. D. Keyes, commanding the third artillery, brought his battalion into action with great skill, and, after deploying, made a gallant and successful charge in advance of the dragoons, driving the Indians from the hill-sides far into the plain; and again, after the dragoon charge, Captain Keyes pushed vigorously forward in pursuit as long as an enemy was to be seen. Captain Keyes reports the gallantry of the officers and men of his battalion as admirable, and so uniform among the officers that he cannot attempt to discriminate; the position of some of the officers, however, brought their conduct under the special notice of the captain, and in that connexion he mentions Lieutenants Tyler, White and Ihrie. The captain also says: "The activity and intelligence displayed by Lieutenant Kip, adjutant of the battalion, in transmitting my orders to all parts of the line, was most commendable."

3. Captain F. T. Dent, commanding the rifles, composed of two companies, "B" and "E," ninth infantry, with Captain Winder and Lieutenant Fleming, brought his battalion into action with great spirit; and after deploying on the hill, in front of the pine forest, dashed gallantly forward, and, sweeping through the woods, drove the Indians before him, and came out on the plain, forming the right wing of the whole line of foot troops. Captain Dent speaks in high terms of Captain Winder and Lieutenant Fleming, and the men of both companies, for the intelligent and fearless manner in which they behaved throughout the battle, and further says, "I feel I have a right to be proud of my battalion."

4. Lieutenant John Mullan, second artillery, topographical engineers, and commanding the friendly Nez Percés Indians, moved gallantly forward in advance, and to the right of the foot troops, in the early part of the action, giving and receiving from the enemy a volley as he skirted the brush to the east of the main hill. Lieutenant Mullan speaks in glowing terms of the conduct of the Nez Percés throughout

the action: at one time charging the enemy lurking in the brush and timber on the Spokane plain, driving him out and pursuing him beyond view; and again a small party under the chief Hutes-e-mah-li-kan and Captain John met and engaged the enemy that were endeavoring to attack our rear, recapturing a horse left by an officer while moving over the rocks and ravines. Lieutenant Mullan expresses his approbation of the good conduct generally of this band of friendly Nez Percés, and mentions *Hutes-e-mah-li-kan*, *Captain John*, *Edward*, and *We-ash-kot* as worthy of special notice for their bravery.

5. It affords me additional pleasure to present to the department the gentlemen on my staff: 1st Lieutenant P. A. Owen, 9th infantry, acting assistant adjutant general; 1st Lieutenant John Mullan, 2d artillery, engineer officer; Captain R. W. Kirkham, assistant quartermaster; and Assistant Surgeon J. F. Hammond, chief of the medical department.

These gentlemen were with me on the field, cool and collected, ever ready to convey my orders to every part of the line, or to attend to their professional duties as circumstance might require. Their good conduct and gallantry commends them to the department. Enclosed herewith is a topographical sketch of the battle-field, prepared by Lieutenant Mullan, illustrating the tactical part of this report.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL, *Assistant Adjutant General,*

Headquarters Department of the Pacific, Fort Vancouver, W. T.

No. 14.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,

Camp on the Spokane river, Washington Territory,

1½ mile below the Falls, September 6, 1858.

SIR: I have the honor to submit the following report of the battle of the "Spokane plains," fought by the troops under my command on the 5th instant. Our enemies were the Spokanes, Cœur d'Alenes, Pelouses, and Pend d'Oreilles, numbering from five to seven hundred warriors.

Leaving my camp at the "Four Lakes" at 6½ a. m. on the 6th, our route lay along the margin of a lake for about three miles, and thence for two miles over a broken country, thinly scattered with pines; when emerging on to the open prairie, the hostile Indians were discovered about three miles to our right, and in advance, moving rapidly along the skirt of the woods, apparently with the view of intercepting our line of march before we should reach the timber. After halting and closing up our long pack train, I moved forward, and soon found that the Indians were setting fire to the grass at various points in front and on my right flank. Captain Keyes was now directed to

advance three of his companies, deployed as skirmishers, to the front and right; this order was promptly obeyed, and Captain Ord, with company "K," Lieutenant Gibson, with company "M," and Lieutenant Tyler, with company "A," 3d artillery, were thrown forward. At the same time Captain Hardie, company "G," 3d artillery, was deployed to the left, and howitzers, under Lieutenant White, supported by company "E," 9th infantry, under Captain Winder, were advanced to the line of skirmishers. The firing now became brisk on both sides—the Indians attacking us in front and on both flanks. The fires on the prairie nearly enveloped us, and were rapidly approaching our troops and the pack train. Not a moment was to be lost. I ordered the advance. The skirmishers, the howitzers, and 1st squadron of dragoons, under Brevet Major Grier, dashed gallantly through the roaring flames, and the Indians were driven to seek shelter in the forest and rocks. As soon as a suitable position could be obtained, the howitzers, under White, opened fire with shells; the Indians were again routed from their cover, closely pursued by our skirmishers, and followed by Grier with his squadron leading. At this time our pack train was concentrated as much as possible, and guarded by Captain Dent, 9th infantry, with his company "B," Lieutenant Davidson, 1st dragoons, with his company "E," and Lieutenant Ihrie, 3d artillery, with his company "B," advancing; the trail bore off to the right, which threw Ord and Tyler, with their skirmishers, to the left. A heavy body of Indians had concentrated on our left, when our whole line moved quickly forward, and the firing became general throughout the front, occupied by Ord, Hardie, and Tyler, and the howitzers, under White, supported by Winder, with Gregg's troop of dragoons following in rear, waiting for a favorable opportunity to make a dash. At the same time Gibson, with company "M," 3d artillery, drove the Indians on the right front. An open prairie here intervening, Major Grier passed the skirmishers with his own and Lieutenant Pender's troops, and charged the Indians, killing two and wounding three. Our whole line and train advanced steadily, driving the Indians over rocks and through ravines. Our point of direction having been changed to the right, Captain Ord found himself alone with his company on the extreme left of the skirmishers, and opposed by a large number of the enemy; they were gallantly charged by Captain Ord, and driven successively from three high table rocks, where they had taken refuge. Captain Ord pursued the Indians until, approaching the train, he occupied the left flank. In this movement, Captain Ord was assisted by Captain Winder and Lieutenants Gibson and White, who followed into the woods after him.

Moving forward towards the Spokane river, the Indians still in front, Lieutenants Ihrie and Howard, with company "B," 3d artillery, were thrown out on the right flank, and instantly cleared the way; and after a continuous fight for seven hours, over a distance of fourteen miles, we encamped on the banks of the Spokane, the troops exhausted by a long and fatiguing march of twenty-five miles, without water, and for two-thirds of the distance under fire. The battle was won, two chiefs and two brothers of the chief Garey killed, besides many of lesser note

either killed or wounded. A kind Providence again protected us, although at many times the balls flew thick and fast through our ranks; yet, strange to say, we had but one man slightly wounded.

Again it affords me the highest pleasure to bear witness to the zeal, energy, perseverance, and gallantry displayed by the officers and men during this protracted battle.

1. Brevet Major W. N. Grier, commanding a squadron of the 1st dragoons, composed of his own company and that of Lieutenant Pender, made a gallant charge at the right mount, killing two and wounding three of the enemy. The major speaks in the highest terms of the gallantry of Lieutenant Pender, commanding company "C." Lieutenant Davidson, with company "E," was rear guard to the general train, and that duty was well performed. Lieutenant Gregg, with company "H," was posted in rear of the howitzers, with a view of making a dash at the enemy; but the ground was so broken that dragoons could not operate effectively.

2. Captain E. D. Keyes, 3d artillery, commanding battalion, persevering, energetic, and gallant throughout the whole day; although his troops extended over a mile, yet the captain was always in the right place at the right time. Captain Keyes reports the following companies and officers as particularly distinguished:

Company K, Captain E. O. C. Ord and Lieutenant M. R. Morgan.

Company G, Captain J. A. Hardie and Lieutenant Ransom.

Company M, Lieutenants Gibson and Dandy.

Company A, Lieutenants Tyler and Lyon.

The howitzer battery, under Lieutenant White, with a detachment of twenty men belonging to company D, 3d artillery, behaved most gallantly throughout the action; light shells were thrown into the midst of the enemy during the fight, and with good effect.

The conduct of Lieutenant Kip, adjutant of the battalion, is noted by Captain Keyes as having been excellent throughout the day.

3. The rifle battalion, companies B and E, 9th infantry, under Captain F. T. Dent.

Captain Dent, with his company, was on the rear guard to protect the pack train; this duty was handsomely performed, and the train moved along unharmed by the enemy or the fires.

Captain Winder was detached, with Lieutenant Fleming and company E, to support the howitzer battery. This service was admirably performed, bravely advancing with the howitzers, and pouring in a fire with their rifles, wherever an opportunity offered, until the close of the battle.

4. The friendly Nez Percés were employed chiefly as spies and guides, and, towards the close of the action, in guarding the pack train and animals; as usual, they behaved well.

During the battle a chief was killed, and on his body was found the pistol worn by the lamented Gaston, who fell in the affair with Lieutenant Colonel Steptoe, in my last.

Again I have the pleasure of presenting to the department the gentlemen of my staff:

1st. Lieutenant P. A. Owen, adjutant 9th infantry, and acting assistant adjutant general.

1st. Lieutenant J. Mullan, 2d artillery, engineer officer, and commanding friendly Indians.

Captain R. W. Kirkham, assistant quartermaster.

Assistant Surgeon J. F. Hammond, United States army.

Assistant Surgeon J. F. Randolph, United States army.

These gentlemen were all on the field, cool, energetic and brave, whether conveying my orders to distant points of the line or attending to their professional duties. A memoir and topographical sketch of the field by Lieutenant Mullan, acting engineer officer, is herewith enclosed. Very respectfully,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

*Asst. Adj. Gen., Headquarters Department of the Pacific,
Fort Vancouver, Washington Territory.*

No. 15.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp on the Spokane river, W. T., 16 miles above the " Falls,"
September 9, 1858.

SIR: I remained during the 6th at my camp, three miles below the falls, as my troops required rest after the long march and battle of the previous day. No hostile demonstrations were made by the enemy during the day; they approached the opposite bank of the river in very small parties and intimated a desire to talk, but no direct communication was held with them, as the distance was too great and the river deep and rapid.

Early on the morning of the 7th I advanced along the left bank of the Spokane, and soon the Indians were seen on the opposite side, and a talk began with our friendly Nez Percés and interpreters. They said that they wanted to come and see me with the chief Garey, who was near by. I told them to meet me at the ford, two miles above the falls.

I halted at the ford and encamped; soon after Garey crossed over and came to me; he said that he had always been opposed to fighting, but that the young men and many of the chiefs were against him, and he could not control them. I then told him to go back and to say to all Indians and chiefs, "I have met you in two bloody battles; you have been badly whipped; you have lost several chiefs and many warriors killed or wounded. I have not lost a man or animal; I have a large force, and you Spokanes, Cœur d'Alenes, Pelouses, and Pen d'Oreilles may unite, and I can defeat you as badly as before. I did not come into this country to ask you to make peace; I came here to fight. Now when you are tired of the war, and ask for peace, I will tell you what you must do: You must come to me with your arms, with your women and children, and everything you have, and lay them

at my feet; you must put your faith in me and trust to my mercy. If you do this, I shall then dictate the terms upon which I will grant you peace. If you do not do this, war will be made on you this year and next, and until your nation shall be exterminated."

I told Garey that he could go and say to all the Indians that he might fall in with what I had said, and also to say that if they did as I demanded no life should be taken. Garey promised to join me the following (yesterday) morning on the march.

After my interview with Garey, the chief Polotkin, with nine warriors, approached and desired an interview. I received them. I found this chief was the writer of one of the three letters sent to you by Congiato; that he had been conspicuous in the affair with Colonel Steptoe, and was the leader in the battles of the 1st and 5th instant with us; they had left their rifles on the opposite bank. I desired the chief and warriors to sit still while two of his men were sent over to bring me the rifles. I then told this chief that I desired him to remain with me, with one of his men whom we recognized as having been lately at Walla-Walla with Father Ravelle, and who was strongly suspected of having been engaged in the murder of the two miners in April last. I told the chief that I wished him to send his other men, and bring in all of them with their arms and families. I marched at sunrise on the morning of the 8th, and at the distance of nine miles discovered a cloud of dust in the mountains to the front and right, and evidently a great commotion in that quarter. I closed up the train and left it guarded by a troop of horse and two companies of foot, and I then ordered Major Grier to push rapidly forward with three companies of dragoons, and I followed with the foot troops. The distance proved greater than was expected, deep ravines intervening between us and the mountains; but the dragoons and Nez Percés, under Lieutenant Mullan, were soon seen passing over the first hills. The Indians were driving off their stock, and had gone so far into the mountains that our horsemen had to dismount, and, after a smart skirmish, succeeded in capturing at least eight hundred horses; and when the foot troops had passed over the first mountain, the captured animals were seen approaching under charge of Lieutenant Davidson, with his men on foot, and the Nez Percés. The troops were then re-formed and moved to this camp, I having previously sent an express to the pack train to advance along the river. After encamping last evening I investigated the case of the Indian prisoner suspected of having been engaged in the murder of the two miners; the fact of his guilt was established beyond doubt, and he was hung at sunset.

After sunset last evening I sent two companies of foot and a troop of horse three miles up the river to capture a herd of cattle, but they were so wild that it was found impossible to drive them in; another attempt was made this morning, but they could not be obtained.

Very respectfully, your obedient servant,

GEO. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Ass't Adj't. Gen., Headquarters Department of the Pacific,

Fort Vancouver, W. T.

The following letter, written to Mr. Mix, then acting Commissioner of Indian Affairs, shows that the acts of the friendly Indians should be long remembered, and gives in some detail the peculiar condition of Indian affairs in the two northwest Territories, and is taken from the published report of the Commissioner:

CAMP AT THE FOUR LAKES,
Spokane Plains, Washington Territory,
September 5, 1858.

MY DEAR SIR: I deem it a duty that I owe both you and myself, in view of the present active Indian hostilities in which we are now engaged, in view of the complicated and much misrepresented difficulties of the past, and I fear the threatening disturbances of the future, to write you to put you in possession of views and facts that can be only learned by those in the country; and I am sufficiently confident to believe, from my former connexion with Indian affairs, that my letter will meet at *your* hands, at least, some favor.

Immediately after Colonel Steptoe's defeat I wrote you, giving at that time such facts and views as were pertinent, reserving to myself the privilege of adding to and modifying them as circumstances might determine. There is no longer need to conceal the truth. We are in the midst of another Indian war, fraught with what results and of what duration the future alone must tell. How these difficulties originated, whence they sprung, is a long, long story, and requires a greater length than my letter can give; suffice it to say that I regard the present difficulty as only another link in the same chain that has been but too often brought to the notice of the Indian department. The department has had *facts* reported to it from time to time by those passing through and those living in the country, and I am far from believing that either the Indian Commissioner or the Secretary of the Interior has paid a deaf ear to these representations; but, on the contrary, must and do believe that each in his sphere has done his duty, and the onus of responsibility must rest with Congress.

The time no longer exists when passiveness is to be the rule of action in this region. Special cases require special remedies, and an old, effete, worn out system no longer is applicable to the state of affairs in this quarter.

The wave of civilization from the east in times past drove the Indian westward before it; but in ten years how changed! That wave is now moving with an equal if not increasing rapidity eastward from the Pacific. While in the south the Indian no longer reposes in his once quiet home, but driven in all directions, it is in this region alone that we must and shall hereafter have our great Indian conflicts. The population that has poured for the last ten years into the northwest is now demanding a new exodus for its already redundant numbers, and all point to this region as the future locale of their homes. The population hitherto pent up westward of the Cascade mountains' barrier has suddenly broken loose through a new golden gate, and now begins to swarm over a hitherto deserted region. The English

and American governments, by their commissioners, in marking a line of boundary for each along the 49th parallel, are fast developing a region in which not one people, but *two great nations* are now feeling an interest; and the difficulties in our interior along the Salt Lake route, which have for the last three years completely blockaded our emigrant road, and put far asunder the two extremes of our country, are being fast ameliorated, and soon must an emigration of three years' growth rush into this region, offering them now so many golden inducements. Can we, then, I say, in view of these things, longer rest inactive, and allow fires to spread in immense magazines ready for the burning? For the last three years the cry from this coast has been "Indian wars! Indian wars!" "Give us remedy for our disease;" "Give us protection ample to our purpose." "So arrange affairs with our Indians that our peaceful frontier settlements shall no longer be open preys to insensate savages." But to all their cries a deaf ear has been turned; and I am in a measure not surprised, because at that time our highest military authority, General Wool, proclaimed publicly that no war existed, when at the same moment villages were being burned and razed to the ground; men, women, and children butchered, and desolation was overspreading the land. For facts, look to southern Oregon; look on Puget's Sound; and look in our interior, and they come up in volumes. All I can say is, I sincerely trust that those who have so proclaimed these things may *only* have committed errors of judgment. Let them explain the whys and wherefores, if they exist. I know, in giving expression to such views and sentiments, that I censure harshly a man high in position, but the vindication of truth compels me to the position. Are we then to have re-enacted scenes with which 1855 and 1856 were so replete?—scenes that cost many valuable lives and a debt of unpaid millions. By some the *people* were charged with bringing on the last war; by others *treaties* made with Indians were the cause. But where will these same persons find causes now sufficient to justify such views? Here is a case solely of a United States force moving through a region of country inhabited by Indians with whom no definite or specific treaty was made, moving under an officer high in rank, high in reputation, on a pacific expedition, and most unprovokedly and savagely attacked. How, I ask again, will those having views above mentioned justify *now* their position? No, the disease lies still deeper, and unless we strike the root we shall never be enabled to cure the malady. The seeds for a more serious war are being sown, which only the strong arm of the War Department *must* finally put down.

There are but two alternatives left to us in this region. The past confirms it, and the present still further strengthens it. The one is a well adjusted, prudent peace policy, carried out by men alive and equal to their duties, honest to the Indian and the department, and who fill positions neither for position nor gain's sake; the other is the force of arms, wisely but vigorously applied. The Indian is a creature of timidity on the one hand and cupidity on the other; and when these two elements of his nature are ignored, the Indian char-

acter is not known. We must therefore cater to, and cater for each. Such being the case, the only manner in which difficulties can arise will be the manner of the administration of each. How these are managed I leave for the history of the past to reply. It is not my province either to set myself up as a general critic or put myself in a position where truth, left too naked, might cause many high in position to blush for errors of judgment and errors of action. I would prefer to leave the past, both as enacted by our military and civil authorities, to oblivion, save as showing the wherefore of some of our Indian troubles in this quarter.

The Indian history of this region is different from that of any in any other quarter of our country. The country was thrown open to settlement before any preparation was made for their reception—before the Indian title was extinguished; and hence alone, in my judgment, the cause for *most* of our Indian troubles in this region. I am not forgetful, of course, of the great natural cause—the contact of the red and white man—that our history for two centuries past proclaims to be the great radical cause of our Indian warfares.

But in this region, to this great first cause, is superadded causes that in themselves *alone* have been sufficient to light in one lurid flame of war our whole Pacific slope, that might have long since exterminated its whole white population.

Those seeing these things at a still later day, and being in position to avert them by a wise, discreet policy for ourselves, and a just one for the Indian, set to work, and from the Rocky mountains to the Pacific coast labored hard and long in the field and office, travelling through every Indian tribe, learning their history and wants, and with the authoritative voice of the government made three years ago treaties with these northwestern Indians; and to this day the labors of Governor Stevens are disregarded and uncared for, and the treaties containing the solemn promises of the Indian on the one side and binding obligations of the government on the other lie among the dusty archives of Congress, while a war rages in every quarter of the northwest coast. The Indians feel that their rights have been trifled with by promises, made by agents armed and vested with authority to act, which the government has not ratified. And will it, I ask, longer remain in this passive mood? Will it longer act inertly while lives are sacrificed and millions squandered, and still longer hesitate to act? For one, I trust not. Let these be ratified; let the country be thrown open to our people; let the Indians have sent among them good, honest, upright agents; let school houses and churches be erected, fields enclosed, farming utensils and the implements and seeds of civilization be introduced, and I boldly predict that ere many years have passed away, instead of finding one vast field of desolation, we shall be proud to point from this stand-point, where an ever-to-be-remembered battle has been fought, to many green spots to the north and south, east and west.

Like an immense monster of desolation to these Indians the waves of civilization are fast approaching them, and ere long, unless prompt

and speedy measures be taken for their security and safety, must engulf and destroy them. Who, then, is to raise the averting arm?

Since men from afar are sent to this region to study and find out what I see around me daily and momentarily, I trust what is given with but little labor and without price will meet with favor, especially as there are officers high in position here who endorse my views. In the above I refer to the mission of Mr. Mott to this quarter. I have learned the object of his mission, and wish it well; and I can but hope, and am led to believe, that Mr. Mott must be a man whose past history has been such as to bring him sufficiently close to Indian tribes to know full well Indian character. To know the Indian you must be with him; to know his worth it must be tested; to know his treachery it must be felt. Remember the war that now exists has its seat and its focus at the point whence I now write you. It is not my province to give you the details of a battle of which this point has been the scene, fought by Colonel Wright against three hundred or four hundred Indians; for these you will doubtless get from the journals of the day with as much correctness as I might give them. Suffice it for me to say he has fought a memorable, never to be forgotten fight; since he killed, discomfited, and drove in dismay the enemy from the field without sustaining a single loss to his command. He marches from this point to-morrow, armed with a determination to carry the war boldly and vigorously into the enemy's country; and though the campaign in which we are now engaged may not be completed this season, still I believe a blow has been struck that foreshadows the views and determination of the Department of War. It is now for Congress to say, and to say *soon*, what course shall be pursued to establish a permanent peace with the Indian tribes. A temporizing peace policy has signally failed, and now the *inaction of Congress* and dire necessity compels us to drive, with powder and ball, our enemy before us.

But allow me, my dear sir, while this general war is going on, to point you to at least a few green spots where the ravages of war do not as yet extend, and which thus far are untainted and unaffected, with a view of so retaining them that we may hereafter point to them as oases in this desert of war. These green spots are the Nez Percés, the Flatheads, and Pend d'Oreilles; and in this connexion I refer to an act of Colonel Wright which embodies views and motives which, endorsed and carried out by the government, must redound to his credit and praise, and be the means of building up, at no distant day, a bold, brave, warlike, and numerous people. Before leaving Fort Walla-Walla, with a view of retaining the friendship of a powerful tribe and preventing a general coalition and combination of tribes, and a *fire in our rear*, which if once commenced must end in our total destruction, Colonel Wright assembled the Nez Percés people, told them his object was to war with and punish our enemies, but as this great people were and ever had been our friends that he wanted their friendship to be as enduring as the mountains around which they lived; and in order that no difference of views or difficulty might arise that their mutual promises should be recorded, and with this

view he made a treaty of *friendship alone*, and thirty bold warriors, marshalling themselves under brave war chiefs, were placed at his disposal to assist him in finding and fighting his enemy. This is the same people who, meeting the flying columns of Colonel Steptoe in hot night-retreat, having abandoned animals, provisions, and guns, behind them, received him with open arms, succored his wounded men, and crossed in safety his whole command over the difficult and dangerous south fork of the Columbia, at a time when no other means whatever to outreach a foe, who, already triumphant with success, had determined his complete destruction. Here, then, is an instance in Indian history that must and will long stand on record, not to be forgotten. Colonel Wright, on entering their country, was not unmindful of this noble act, when we might—aye, justly, too—have anticipated a lurking foe in that same tribe, and he took such measures as to keep their friendship. It is now for you to say whether this shall be inviolable.

They have no agent *who lives among* them. They are far advanced already in civilization—much further than any tribe west of the Rocky mountains, except the Flatheads. They are inclined to agriculture; already raise wheat, corn, and vegetables, with the rudest of means. When asked by Colonel Wright what they wanted, their reply was well worthy of a noble race: "*Peace, ploughs, and schools.*" And will you, can you, longer refuse them these? I ask, therefore, to commend these noble people. I ask that a special appropriation be made to give these people schools, farms, and seeds; that means be taken to so build them up in their mountain homes that we may be enabled to point with joyous pride to a first few tutored savages in the Rocky mountains reclaimed from their wild, nomadic habits; and while asking, aye, *petitioning*, for these, I cannot forget my old mountain friends, the Flatheads and Pend d'Oreilles. As yet they are friendly, and I ask that you retain their friendship. I made both to Governor Stevens and to yourself, four years ago, petitions in their favor; but, alas! they passed unheeded. I again renew them, and ask that steps, prompt and efficient, be taken that will avert from these noble bands the devastating arm of war. I ask not that *my* version be taken alone, but simply ask that it go to form part and parcel of versions given by abler pens, and men who saw but to reflect upon the past and future destiny of the Indians. I point you, commencing with Lewis and Clarke in 1804 to the present day, to the accounts of all travellers across the continent; and with one accord they point to the Nez Percés and Flatheads as two bright, shining points in a long and weary pilgrimage across a prairie desert and rugged mountain barrier, alive with savage hordes of Indians, where they have been relieved and aided when most in need; and instances sufficiently numerous to swell a volume exist that render it needless for me here to refer to them. But I make one more appeal in behalf of these people. My duties and labors have brought me often and long in contact with them, and I instance now not views or judgments, but facts that should speak sufficiently loud to reach the ears of our government at Washington in thundering tones and arouse them to a

course of bold, energetic, praiseworthy action that will speedily and radically remedy a disease that is fast devouring a people once numerous on our western slopes.

A state of things so entirely different from anything east of the Rocky mountains exists in this region that an attempt to describe it ends in futility. Far distant points to be reached; long lines of transportation; only one superintendent in regions requiring at least *one whole year* to visit. And where are his headquarters? In the southern portion of the Willamette valley; in a quiet, peaceful, civilized spot, where Indians are not and war rages not, while hundreds of miles and thousands of Indians are left unvisited and unseen. Has the superintendent of Indian affairs ever *seen* the Indians against whom we are now moving? No! not one. *He cannot*. Could he accomplish impossibilities, it would have been done, doubtless. I say this: Have these Indians an agent? No. What can you then expect? On the one hand we have a Territory thundering at the doors of Congress, demanding as her right her admittance to an equality with the States of the Union; while on the other Indian wars are raging, Indian titles unextinguished, and no preparations made for a position for her people.

It is not my province or my desire to point out any course to be followed for fear of laying myself open both to criticism and censure. But I boldly, and fearlessly, and honestly say that *one* superintendent, with his headquarters at Salem, in Oregon, is not equal to the task of performing the responsible duties of superintendent for so many thousands of Indians. If *one* man could perform the labors that would keep *three* men most actively and daily engaged, *then* he could do it; but at present, not. But, my dear sir, I will not tax you further, though I could and might say much more. I most sincerely trust that the Secretary of War may so regard my work and movements as to enable me to visit Washington this coming winter; and if such should be the case, we can then give expression to such views as circumstances *now* so full of meaning may by that time develop; but feeling, as I do, an interest in the future of tribes concerning whom I have been enabled to learn much, I could not remain silent when by speaking good might result.

Hoping to meet you the coming winter, I am, my dear sir, your friend,

JOHN MULLAN.

CHARLES E. MIX, Esq.,

Acting Commissioner of Indian Affairs, Washington, D. C.

On a more thorough examination of the country we found ourselves at four beautiful lakes in the Spokane plain, skirted by beautiful open pine forests, which immediately suggested a name, and hence the colonel called his battle that of the "Four Lakes."

In order to rest both men and animals, and prepare despatches to be sent to the settlements, we tarried here till the morning of 5th September, which afforded us an excellent opportunity to determine with some accuracy the position of the Four Lakes, and work up our

material collection on the route. Our camp was in good grass, with wood and water. The pine here growing, is tall and straight, and when the day arrives for this region to be settled, it will be brought into requisition for building purposes. Resuming our march for the Spokane river early in the morning of the 5th September, our route lay along the eastern edge of the largest of the Four lakes.

About a mile from camp, on gaining the summit of one of the prairie buttes, we had a fine view of the Spokane plains; which to the north-east and west were bounded by lines of high timbered hills. The Spokane river running at the southern foot of the hills or butts, seen to our north. The southern portion of the plain is skirted by a strip of timber some five miles broad. This plain is rich and fertile, well grassed, with small clumps of timber, pine and cottonwood at detached points.

The enemy in numbers greater than yesterday, again made his appearance to our east, on the hills, and through the timber; and though badly whipped the day before, determined upon giving us battle again.

Preparations and dispositions being again made by the colonel, a second battle on the "buttes of the Spokane plains" was fought and won; regarding the details of which the colonel's following official report gives it in full.

The Indians, after leaving the prairie, continued the fight in the timber, and we moved on, driving them before us, until we reached the Spokane river, no water being found on the whole line; our march being twenty-seven miles, when we encamped on the left bank of the stream, finding scanty grass for our animals, but water and fuel in abundance. The latter part of our route was somewhat difficult, owing to the timber and rocks.

We found the Spokane where we struck it a stream fifty yards wide, lined on either side with strips and forests of pine, and flowing with a rapid current; water from three to four feet deep, over a pebbly bed, with banks gradually sloping on either side to some fifty feet high, when the high water land, or what is here known as the Cœur d'Alène prairie, is reached.

Following through the timber for a mile along the left bank of the Spokane river, we encamped for the night. Our enemy no longer annoyed us, having driven him in dismay and discomfit for fifteen miles before us, leaving many killed and wounded on the field, with his property scattered in every direction; and they now broken in small groups for miles around, it became time for them to consider their position. Our men and animals, much fatigued with a long march and harassing fight, rested in camp on the 6th of September.

Finding that the Indians were to our east with their families and camps, and that they evidently intended to take flight to the mountains, the colonel determined to move up the river, and for this purpose the following day was spent, by his direction, in the examination of the river, in order to find a good ford to cross the command. But finding, at and below our camp, the stream not proving fordable, we determined to continue our march along the left bank of the

Spokane to one of the principal fords above, our camp having been one mile below the mouth of the Lahtoo or Neduhuald, or Camass Prairie creek, and about three and a half miles from the Upper or Great Falls of the Spokane.

To our north, across the river, lay the broad Cœur d'Alène prairie; to our east and south the high frusted hills; while to our west were had a series of extensive plains of different levels.

The morning of the 7th September found us in motion along the left bank of the Spokane, through the timber for a mile, when we reached the Lahtoo, now dry, but which, by its cut-banks and rocky bed, gave evidence of the volume and force of water that must course through it during the spring, or freshet season.

This is a great fishing point for the Indians, as shown by the number of *barriers* in the bed of the stream for catching salmon. The hills and plains around afford fine grazing for their large bands of stock. Fuel from the large pine forests is had in abundance; while nature furnishes them with shoals of the fastest salmon. The salmon ascend this stream to the Upper Falls, that are two and a half miles above the Lahtoo; but during high water they even pass beyond these falls to the very mountains.

The Spokane Falls are formed by the whole volume of the Spokane river dashing over an inclined ledge of rocks, giving a total fall of from forty to fifty feet. The river is here fifty yards wide, water clear and limpid, and flowing through a basaltic trough or dalle. In passing around the falls the view is shut out for some distance, when again coming in sight of the river the effect is quite magical; for the stream which but a few moments before was far below us, is suddenly on a line with our feet, we in the meanwhile travelling on the same level plain. The pine, too, now gives place to fringes of cottonwood and willow, and the stream flows through, as it were, a beautiful, flat, and extensive meadowland.

Travelling six miles from our camp of yesterday, we reached a ford, though deep. Here we halted and encamped on the left bank, and owing to circumstances that developed themselves at this point, the colonel determined not to cross the river here, but to continue for some miles above to a second ford, which was better, and the wisdom of his course was the next day shown; for having started early on the morning of the 8th of September across the beautiful plain along the left bank of the Spokane, which plain is here, in fact, only a portion of the Cœur d'Alène prairie proper, it being divided by the course of the Spokane river, he came upon and overtook a camp, which, with their large bands of stock, were fleeing to the mountains. After a pursuit of eight miles and a slight skirmish, the Indians were made to fly, leaving behind them some nine hundred horses and a number of stock. These last were taken without loss or accident. This occurred at a small lake in the prairie south of the Spokane river, which lake, in honor of the veteran whose services were here as elsewhere during the campaign, so marked and brilliant, we have called Lake Grier. The command moving towards the Spokane river from Lake Grier, encamped upon its left bank for the night, after a march of

fourteen and a half miles, finding good grass, wood, and water. The following report gives all the details regarding this capture:

It becoming necessary to remain in camp the 10th and 11th of September, we built a corral, in which to kill the large band of horses captured from the enemy. It was not our desire to keep any, except a few of the best for packing or riding purposes, as this large band would only encumber us; but as our desire was to strike a blow that should teach the Indians a never-to-be-forgotten lesson, it was decided to kill them. So driving them in a corral, eight hundred beautiful animals were shot, in addition to a number of horned stock captured from the enemy, together with burning a number of dwellings and barns of grain. This camp was appropriately termed the "Horse Slaughter Camp." Here we received notification of the friendship of the people of Big Star. The Cœur d'Alenes having found themselves vanquished, now sued for peace through Father Joset, one of the Jesuit priests at the Cœur d'Alene mission. This and other things determined the colonel upon his next line of direction, which was to cross the Spokane at its upper ford on the morning of the 11th, and to continue along its right bank to the Cœur d'Alene lake. This lead us over an easy prairie road for two and a half miles, where the road forked, one leading across the Cœur d'Alene prairie to the Clark's fork of the Columbia, and the other through the open pine timber along the right bank of the Spokane river. Taking this last and travelling thirteen and a half miles, we reached the western end of the Cœur d'Alene lake, passing at a few points small patches of prairie sufficiently large for camping purposes. About twelve miles below the lake the river makes another fall, passing through a deep and narrow rocky gorge some thirty yards wide, in a beautiful sheet of white foam. Below this point it flows sluggishly for a number of miles. This is also the case above the falls, forming here almost a continuation of the lake. On our route the river was hid from view for seven miles, when we struck it again at some Indian fields, which we destroyed, burning here also two or three barns of wheat, thus marking our line by signs, the intent of which the Indians could not mistake. From these fields to the lake was four miles, when, reaching a small prairie bottom, with sparse grass, we encamped for the night at the edge of the pine forests. We passed along the route a small Indian burial-ground, where the marks of civilized and Christian influence were shown by the number of crosses erected over the graves; and though our march was one of devastation through the country, we left unharmed and untouched the spot where reposed the lifeless dead.

Up to the end of the lake we had run our odometer line continuously from Fort Dallas without accident to our wagon, though it had passed through some ugly and difficult places; but by the uniform kindness of Captains Keyes and Dent, who often voluntarily sent their men to its aid and rescue, we were enabled to get it through thus far safely. But now we were about entering a somewhat difficult portion of the Cœur d'Alene mountains, where the timber was thick, and where an Indian trail alone marked the route, and it was my purpose to leave

it at this point; and in case we retraced our steps to recover it, and in case we passed to the south of the lake, we could send some friendly Indians in their canoes, who taking it apart could cross it, and we be thus enabled to resume our line.

We therefore abandoned it, but the hostile Indians coming upon our rear the next day, burnt it, and thus saved us any further anxiety in the case. Our mountain howitzers, under Lieutenant White, that had also run on wheels thus far, had to be backed on mules, leaving behind only a prairie limber, which met with the same fate as the wagon.

Resuming our march on 12th September, we followed an Indian trail along the Cœur d'Alene lake for $3\frac{1}{4}$ miles, where we began the ascent of a high steep limestone mountain, from which at different points were exposed large masses of beautiful marble. Gaining the summit of this hill we enjoyed a fine view of this Cœur d'Alene lake, which here is a beautiful sheet of water, three miles broad, with an arm extending as far south as the eye could see. Immediately along the shores of the lake the water is shallow, with a rocky or pebbly bottom, the water, however, becoming deep at no great distance. The lake is bounded on every side by high, rugged pine clad mountains, that render the whole a unique picturesque panorama. Leaving this hill, our road passing alternately through open pine forests and rugged undergrowth, ascending and descending; in $10\frac{1}{4}$ miles from our camp, we reached a small stream heading in a spring along the road, in a deep hollow or ravine, which stream empties or flows into a small lake, which last connects by a small stream with the Cœur d'Alene lake.

Leaving this spring, in two miles through pine timber, we reached a small beautiful prairie covered with rich luxuriant grass, through which flowed a considerable stream lined with willow; water cold and flowing rapidly. This prairie offered a good camping ground, and is the only one between the western end of the Cœur d'Alene lake and the Missouri. It is bounded on all sides by low pine clad hills or mountains, and affords in this immense bed of mountains a beautiful resting place, where we halted for the night. The stream flowing through this prairie is called the "Wolf's-lodge creek."

Our animals having enjoyed at this point a rich feed of grass, in the morning of 13th September, at an early hour, we resumed our march for the Cœur d'Alene mission. Our trail entering the pine forests along difficult side hills, which we followed for a distance of seven miles, passing a small stream or spring run, affording sufficient water for our men and animals. The road throughout this length was much obstructed by fallen timber.

Resting a short time at the end of these seven miles, we resumed our march, still continuing along difficult side hills and over fallen timber, the last portion being along the sides or edges of rocky limestone, slate and sandstone spurs. At the end of this distance we were repaid by the view of the prairie where is situate the beautiful valley of the Cœur d'Alene mission. The timber along the road to-day was not of a large growth, but the forests here of fir, cedar, and hemlock

are very dense and the strong winds of winter throwing down the trees across the pathway, and the natural indolence of the Indians being such as not to allow them to remove it, of course it accumulates from year to year so as to form an entangling network of trees, crossing and recrossing each other in every possible direction. At sixteen miles from the "Wolf's lodge creek" we reached the mission, which here lies as a gem embosomed in the mountains, and gives evidence of the labors of that indefatigable band of Jesuit fathers who braving all dangers and surmounting all difficulties, have gone forth to the mountain fastnesses to proclaim the gospel to the benighted heathen savage, as well as to improve his temporal condition. They have here erected a large and stately church, planned by, and mostly constructed under the direction of the Reverend Father Ravalli, an Italian and a former professor of chemistry and philosophy in the Jesuit college in Rome. Dwellings, mills, barns, and enclosures, with Indian labor have been made, and everything bespoke an advancement in improvement and civilization that was truly refreshing to behold; all this, too, with the most scanty means and under difficulties before which the hearts of the bravest might truly quail. Various accounts have been given as to the history of the name, Cœur d'Alene, as applied to the Indians.

The version given me, and which would appear to be reliable, is as follows: When the English trading corporation, known as the Hudsons Bay Company monopolized that whole region of Oregon, their successes in establishing trading stations among the Indians was of a most marked character. No tribe, however hostile or numerous, had been ever known to interpose any obstacle in their way, until they made the attempt to establish a station or post among this small band of Indians, who tenacious of their rights, and loving their mountain wilderness, said to this company, "We are willing to barter our furs and peltries for your powder and ball and such things as you bring for traffic, but we can only make the exchange at certain points" named by themselves; "within the limits of our land you cannot enter; but on the banks of yonder river, which marks our border, we will meet you at stated times and there, and there only, we can trade and traffic." Their determination, to which even up to this day they have most steadfastly clung, became the law of the company, and they so persistently maintained it, that the Canadian voyageurs, employés of the company, immediately called these savages "Cœur d'Alenes," Indians having "hearts of arrows," and hence often called Pointed Hearted Indians, and the mission, "Pointed Heart Mission."

When the disciples of Loyola entered this region, with the praiseworthy object of establishing their missions at different points in the mountains, the Cœur d'Alene country, among other sections, was selected as a mission site. "But," said the members of this same company to the fathers, "you are certainly not going to establish a mission among the Pointed Hearts?" "Why not," said they. "Because," was the reply, "we have tried for years past to surmount, and as yet without success, the difficulties that array themselves against us and forbid the attempt."

But the more anxious now, because difficulties did environ their pathway, the noble De Smet, Joset, and Point, in 1842, went forth and successfully established the cross in the Rocky mountains, and, too, in the very heart of the country of these same savages; and the evidences that we now saw around us all bore witness how untiring and successful their efforts had been.

This mission is in latitude $47^{\circ} 33' 54''$ N., longitude $116^{\circ} 13' 45''$ W., approximate and built on the right bank of the Cœur d'Alene river, on a small hill looking towards the north, upon a ridge or spur of the Cœur d'Alene mountains running east and west, at the foot of which is a small but beautiful prairie one mile wide and from two to four long. In this prairie are large and rich fields enclosed, where wheat, oats, barley, and vegetables of all kinds grow in the richest abundance. The mission was first established on the St. Joseph's river; but, as the valley overflowed, the fathers found it necessary to remove to a more favorable locality, and in 1846 selected this site.

The Cœur d'Alenes number about 500 souls, of which 130 are capable of bearing arms. During the difficulties with Colonel Wright and Colonel Steptoe only about 90 were actively engaged, the remainder being neutral. Though not numerous, they are brave and warlike, and, ensconced as they are in the heart of the mountains, they are capable of becoming some day—unless measures are taken to preserve their friendship—a formidable enemy. Their home is in a difficult bed of mountains, and the roads leading thereto are equally difficult to travel, and thus situated they are capable of giving annoyance to a much larger force that might be arrayed against them. They have large bands of horses and horned stock that, living in the fine grass of the mountain valleys, present a fat, sleek appearance. These Indians are industrious, and the fields of vegetables and barns of grain all bespeak an advance far beyond the Indians of the plains. As a tribe they are brave and warlike, but kind and generous. They are of an ordinary stature, and in appearance and general characteristics look not unlike other mountain bands. Their women, like their sex among other tribes, are doomed to all the drudgery of life, but they are represented as chaste and virtuous. Constant exposure from days of infancy to lingering old age leaves its marks upon them, and hence we find few pretty or pleasing faces; but all, with few exceptions, are stunted and frightfully ugly.

The most of the tribe are attached to the mission; and though all do not belong to or profess an attachment to the Catholic creed, yet *all* bear a devotion and affection for the fathers, and have a respect for their labors which is truly beautiful to witness.

The "father" is truly *their* father. In times of difficulty and danger—in things temporal and in things spiritual—he is consulted as the oracle of Delphos, and *his* views, judgments and decisions are nearly always followed; and if not, they are always made to regret it.

Previous to the outbreak and attack upon Colonel Steptoe, the Indians told the fathers of their mood and of their plans. They advised, cautioned, and begged them to desist; but in this instance they followed the wild views of a few chiefs, and headlong rushed into a

war, for which they have been made to pay but a too dear penalty. Whatever their regrets might have been before, certainly now they have been driven to penitence, and I can only hope that it may prove as lasting as apparently sincere. Though it be not necessary to state all the circumstances connected with this tribe of Indians, so far as they relate to this last Indian war, still it might be well to place on record the views held by many while we were at the Cœur d'Alene mission, deduced partly from what we could see, partly from what we heard from others.

After our battle of September 5, a few Cœur d'Alenes, headed by Vincent, their chief, had rendezvoused at the mission, and placing themselves under the guardianship of the fathers had besought them to represent their case to the commanding officer of the troops, and to say "they were sorry for what they had done; that they had been whipped, and they now sued for peace." In order to give them a hearing, and at the same time to strike a blow that they should long remember, we had turned our steps towards the mission, and we determined to tarry here until the different small bands now scattered in the mountains should be collected together. Some were at the lake, some on the St. Joseph's, while others were on the plains and in the mountains. By the evening of September 16, some 80 or 90 lodges were collected together, and the next day was appointed the time for holding the council.

At 10 a. m. of that day the Indians, headed by their chief and attended by the Reverend Father Joset and Minetree, were assembled beneath a council lodge prepared for the occasion, when their chief, Vincent, asked to be heard. Arising, he stated "that his people met us in sadness; their hearts were sorrowful, and their heads bent down to hear a condemnation that justly awaited them; they knew, they felt they had committed a great crime—a crime which they truly repented of, and they now presented themselves to abide by and suffer a punishment that their crimes so richly merited." His speech was brief but impressive, and delivered with feeling, and in expressing his views he expressed the views of all his people. Colonel Wright imposed his own conditions and made peace with them on his own terms; they willingly and apparently in sincerity submitted to his judgments and decisions, but the future alone can tell how faithfully these will be kept. During the difficulties that now terminated so happily for them and, possibly, well for ourselves, the Cœur d'Alenes had taken an active, unexpected and unlooked for part. But, truly, I believe they had been led on step by step to commit this overt act. I now judge them in charity, and if in years to come the reader shall, glancing at these pages, find the character of the Cœur d'Alenes to have become changed, all that could be replied would be—"Impute all to an excess of charitable credulity."

But now, so far as we can judge from the best and most reliable authority, the position of these Indians is somewhat as follows: They are a small mountain band, few in numbers, but strong in position—a band, who in their mountain homes have evinced in years past strong and noble traits of character, which the Jesuit labors of fifteen

years have tended to cultivate and strengthen to such a degree that they, with the Flatheads, now stand pre-eminently in advance of all the smaller bands of the mountain tribes. From their position they had had but little or no contact with the whites until 1853, when a portion of the command, under Governor Stevens passed through their country. The history of the northwest, since 1853, is familiar to every reader of the past as being the history of a country devastated by a long protracted Indian war. During the most of the interval war waged from the south of Oregon to our northern line in one lurid flame, and all the tribes were more or less infected with the general war contagion that now spread over the land. Most of the tribes took an active, a positive part, and those who did not only awaited a favorable opportunity to join the hostile bands, and in this number were the Cœur d'Alenes and Spokanes. Cut off by the position of their homes from a direct contact with tribes then actively engaged in the field, they were kept up to the fighting point by runners from the hostile bands, and we can only believe that they did not join in the war of 1855-'56 from the want of a proper and suitable opportunity, but the war feeling that then existed was continued and maintained, warmed, fostered, and cherished in their breasts until it found vent in the attack upon and defeat of Colonel Steptoe, on the 17th of May, 1858.

This act I sincerely and truly believe to have been a needful and necessary link in the same chain that had held in our Indian policy upon the Pacific, in order to show to the department and to the government at home that that policy carried with it the elements of error, and which this act might tend to remedy and finally eradicate.

Among the runners that then coursed over the country was a small band of Indians living on the border and banks of Snake river, and called the Pelouse, a tribe formed of the renegades of each and every tribe. They enjoy a most unenviable reputation for lying and thieving—their best of traits. With such men for newsmongers and such men for councillors, it is not surprising to know that they were misled and misinformed regarding the true character of the late war, and the causes for which it was waged. They had been told its primary and principal object was for the extermination of the Indian, and to put the white man in possession of his women, his wives, his lands, his all.

The spark of war is thus fanned into a flame, and in addition to the natural instinct and feeling of hostility that the red man in all regions and times bears for the white man, these men felt new causes and new reasons urging and impelling them to war; and they now awaited only a favorable occasion to give vent to their pent-up feelings.

Regarding himself the rightful possessor of the soil, he had determined not to be dispossessed of it without an equivalent. So the war feeling of 1855 was not ended in 1858. Many may join issue, but let them remember that at the end of the winter campaign of 1856 there was a mutual withdrawing of troops and Indians from the field.

In 1857 no troops were sent into the field. The emigrant routes were all blocked up in consequence of difficulties in the interior, and thus no passage of persons was had through the Indian country. The

command under Colonel Steptoe, then, that entered the country in 1858, was the first military force that tried the field since the apparent cessation of hostilities.

But they entered with no hostile intention; on the contrary, Colonel Steptoe, the warm friend of the Indian, had started with a view of adjusting amicably all the differences that existed among the Indians and whites that then had place at Fort Colville; to punish those who had run off cattle from Walla-Walla, and at the same time to produce a moral effect upon the Indian tribes by moving a military column through the country, and give his men at the same time a field experience, and hence the march.

But he knew not, nor was prepared for the development of the temper of the Indians that at that time reigned. An immense hidden magazine lay ready to be sprung for his destruction, and his arrival was to be the torch that should be applied for its explosion. The Indians had determined upon the massacre of his party, if possible, and made their arrangements accordingly. The Pelouse had not been idle during the whole of this time, but continued the circulation of false reports, and his arrival but confirmed and verified their predictions, and lies now became, in the eyes of the Cœur d'Alenes, truths of the first magnitude; and though the headmen of the nation had called upon Colonel Steptoe and asked the object of his mission, still they placed no confidence in his replies, but regarded them as subterfuges to conceal his true intents. They now prepared to carry out their general plan; which was consummated in a sad reverse to our arms, and which the page of history has now appropriated as its own. In this affair it is then seen, that the Cœur d'Alenes had taken an active part—possibly more active than any of the tribes engaged.

During the whole of this time, the Jesuit Fathers had been untiring and indefatigable in their exertions to preserve and maintain a general peace. They harrangued early and late and long, till their weak voices were lost and drowned in the stronger voice of the hostiles crying for war, and until their very motives were suspected and impugned and they themselves threatened a fate that they had now planned for all the whites. But, be it said to their credit, they did not even then desist, nor were they silent, but with their characteristic traits, they persevered to the end.

But these savages had once tasted of battle, they had lost friends and relatives whose death must be now avenged, and they prepared to plunge anew into a second war; and hence, when our columns took the field, they again joined in against us, and their part was most active and conspicuous.

But now, after the 5th September, they acknowledged themselves whipped, they had been worsted in every combat, and nothing now awaited them, if they persisted in their course, but death and destruction. Here again the Jesuits reappear, still active in their exertions, and again remind them of their crimes and the penalty that awaits them; and the Indians, awakening to the realities of their position, were now alarmed at the past and startled at the threatenings of the future. I believe they became truly penitent and saw but too plainly

the developments into which reports, false and malicious, had led them. And now with a determination, under the guidance of the Jesuits, as unexpected as it was worthy, they presented themselves *en masse* before Colonel Wright to abide his decision. Hearing his conditions, they were content, and yielding obedience to the inflictions imposed upon them for their crimes, gave up hostages for the future good behavior of their tribe, and meekly submitted to each and all his terms. Thus ended with them our present troubles, and we can only hope that it may be as lasting as it would seem now to promise; as the Jesuit Father Joset afterwards said, "All is now truly rosytinted."

I have thought it not improper to here append the following letter from the Reverend Father Joset, S. J., to the Reverend Father Congiato, S. J., superior for the mission in the Rocky mountains, which is taken from the official papers of the department, in which, I believe, the whole mood of the Indians is set forth in truthful detail.

Let the reader at least judge for himself. The original letter, of which this is a translation, was written in French at the request of Captain Thomas Jordan, United States army.

No. 17.—*Father Joset to Father Congiato.*

VANCOUVER, June 27, 1858.

MY REVEREND FATHER: I am going to try and satisfy the demand that you have made of me for a detailed relation of the events of the unfortunate 17th of May, and of the causes which have brought such sad results.

Do not think my reverend father that I am beknowing to all the affairs of the savages, there is a great deal wanting; they come to us about the affairs of their conscience, but as to the rest they consult us but little.

I asked one day of Michel the question if a plot was brewed among the Indians? Do you think that there would be any one in it who would warn the missionary? No one, he replied. This was to tell me implicitly that he himself would not inform me of it. However the half-breeds should know it, added I, much less still than the father. After the battle, Bonaventure, one of the best young men in the nation, who was not in the fight, and who, as I will tell later, has aided us a great deal in saving the lives of the Americans who were at the mission at the time of the battle, Bonaventure said to me, do you think that if we thought to kill the Americans we would come to tell you so? You appear also to think that we can do almost anything with the Indians. Far from it. Even among the Cœur d'Alenes there is a certain number that we never see, that I do not know in any manner. The majority mistrust me when I come to speak in favor of the Americans. Those who were present at the assembly called by Governor Stevens, in the Spokane prairie, will not have forgotten how much the Indians insisted the troops should not pass the river Nez Percés. I have heard the Indians insinuate several times that they had no objections to the Americans passing through their country in

small numbers, but much to their passing in force, as if to make laws. Last winter Michel still said to me: "Father, if the soldiers exhibit themselves in the country (of the mountains) the Indians will become furious," I had heard rumors that a detachment would come to Colville; it was only rumor, and having to go down in the spring—having also written to you to that effect, I intended to go to inform Colonel Steptoe of this disposition of the Indians. Toward the beginning of April it was learned that an American had been assassinated by a Nez Percé. Immediately rumor commences to circulate that the troops were preparing to cross the Nez Percés to obtain vengeance for this crime. Toward the end of April, at the time of my departure, the chief Pierre Prulin told me "not to go now, to wait some weeks to see what turn affairs are going to take." I am too hurried, I replied to him, I cannot wait, and as the parents of the young men whom I have chosen appear troubled, I will choose other companions and country. Arrived at the Camass prairie I met the express of the great chief Vincent; this told me to return, his people thought there was too much danger at that moment. I replied that I was going to wait three days, to give the chief time to find me himself; that if he did not come, I would continue my route. I said to myself if Vincent believes really in the greatness of the danger, however bad or however long the road may be, he will not fail to come. In the meantime I saw several Nez Percés. Their conversation was generally against the Americans. One of them said in my presence, "We will not be able to bring the Cœur d'Alènes to take part with us against the Americans; the priest is the cause; it is for this that we wish to kill the priest."

Vincent marched day and night to find me. Below are, in substance, the reasons he instanced to make me return: "Of the danger on the part of the Americans," I well know that there is none; neither is there any danger for your person on the part of the Indians. You would be able, however, to come back on foot; but we are not on good terms with the Pelouses and the Nez Percés; they are after us without cessation to determine us in the war against the Americans. We are so fatigued with their underhand dealings, that I do not know if we will not come to break entirely with them. Their spies cover the country in every sense. When the young men go for the horses they will kill them secretly, and start the report that they have been killed by the Americans. Then there will not be any means to restrain our people. We hear the chief of the soldiers spoken of only by the Nez Percés, and it is all against us, and to excite our young people. I have great desire to go to see him. It was agreed that when I should go down I would take him to see the colonel; it is then I learned a part of the rumors which were spreading over the country. A white man had said, "Poor Indians, you are finished now;" the soldiers are preparing to cross the river to destroy you; then another five hundred soldiers will go to establish themselves at Colville; then five hundred others will rejoin them; then others and others until they find themselves the strongest; then they will chase the Indians from the country. Still another white had seen five hundred soldiers

encamped upon the Pelouse preparing themselves to cross the river. All the above passed three weeks before the last events. Among other things, he said to me: "If the troops are coming to pass the river, I am sure the Nez Percés are going to direct them upon us." I did not then pay much attention to this statement; but later I saw that he had not been deceived in his predictions; as difficult as it is for a white to penetrate an Indian, just so difficult is it for one Indian to escape another. To return to the mission. I was not without anxiety about what might happen in case the troops should come into the country. I was almost sure of the dispositions of the chiefs and of the majority of the nation; but I knew also a part of the youths are hot-headed, not easy to be governed in a first moment of irritation; also that Kamiakin might make a great many proselytes. I had not forgotten the infernal maxim of Voltaire, "*mutons toujours, il en restera quelque lieu*," was true, and that there ought to remain something in the hearts of our people of the thousand and one stories of this horrible Indian. I do not know, however, yet that he repeated without cessation to the Indians: the father is white like the Americans; they have but one heart; they treated the young Cœur d'Alènes like women, like prairie wolves, who only knew how to make a noise.

On the 15th of May I received another express from Vincent. The troops had passed the Nez Percés; they had said to the Cœur d'Alènes that it was for them the soldiers wished. He desired me to go to aid him in preventing a conflict. He told me to be quick—the troops were near. I set out in an instant. I had enough trouble to stop these young men, who were working at the mission; it was an excitement that you could scarcely imagine. The good old Pierre Vincent not only refused to conduct me in his canoe to the lake, but bluntly refused to loan me his canoe. Never before was I in such a situation. The distance from the mission to Vincent's camp was, I think, about ninety miles; as the water was very high, I could only arrive on the evening of the 16th. Vincent told me he had been kept very busy to restrain his young men; that he had been at first to the chief of the soldiers, and had asked him if he had come to fight the Cœur d'Alènes; that upon his negative reply he had said, "Well, go on;" but to his great displeasure he had camped in his neighborhood, (about six miles;) that then he had made his people retire. Still a blood-thirsty Pelouse was endeavoring to excite them. Later other Indians confirmed to me the same report; they were Vincent and the Spokane's chief who prevented the fight on the 15th instant. The chiefs of the different tribes and a quantity of other Indians collected around me. I spoke to them to persuade them to peace. I told them that they did not know with what intention the chief of the soldiers was coming; that the next day they should bring me a horse, and that they might accompany me till in sight of the camp of the soldiers; that I would then go alone to find the officers in command, and would make them to know then what was now doubtful; they appeared well satisfied. I said still to Vincent to see that no person took the advance. The same evening they came from the camp of the Pelouses to announce that one of the slaves of the soldiers (it is thus that they call the In-

dians who accompany the troops) had just arrived. The chief of the soldiers would have said, according to him, "you Cœur d'Alenes, you are well to do; your lands, your women are ours." I told the Cœur d'Alenes not to believe it, that no officer ever spoke in that way; to-morrow I will ask the chief of the soldiers if he has said that. The next morning I saw the Spokane's Tshequysekene "Priest." Said he to me, "yesterday evening I was with the chief of the soldiers, when a Pelouse came to tell him that the priest had just arrived; he has brought some powder to the Cœur d'Alenes to encourage them to kill the soldiers;" then turning round towards the Cœur d'Alenes, "do you see now the deceit of this people." Said I they go and slander us before the soldiers, and slander the soldiers here. When they had brought me a horse, I went to the camp of the soldiers; they were far off. I set out in their direction to join them. I saw Colonel Steptoe; made him acquainted with the disposition of the Indians, the mistrust the presence of the troops would inspire, and how I had been kept from going to inform him in the spring. He told me that, having heard by letter from Colville that the whites had had some difficulty with the Indians, he had at first resolved to go there with a few men, to talk with the whites and Indians, and to try and make them agree, but, having learned that the Pelouses were badly disposed, he had determined to take a stronger escort; that, had he known the Spokanes and Cœur d'Alenes dreaded the presence of the armed force, he would not have come without having notified them; that he was much surprised the evening before to see the Indians; that they had always talked peaceably to him. then to come to meet him with such hostile demonstration, he had well thought they would come to blows; that he was happy to return without spilling blood. I asked him if he did not desire to see the chiefs; upon his reply that his dragoon horses were too much frightened to stop long, I observed to him that they could talk in marching; he then said he would take pleasure in seeing them. I went to seek them. I could only find Vincent; him I conducted to the colonel; he was fully satisfied with him. One of the Indians who accompanied the troops gave Vincent a blow over the shoulders with his whip, saying to him "Proud man, why do you not fire?" then accused one of the Cœur d'Alenes who had followed Vincent of having wished to fire upon a soldier. Vincent was replying to the colonel, when his uncle came to seek him, saying the Pelouses were about commencing the fire. I warned the colonel of it, and then went with Vincent to try and restrain the Spokanes and Cœur d'Alenes; when we had made them acquainted with the disposition of the colonel, they appeared well satisfied. Victor, one of the braves, who has since died of his wounds, said we have nothing more to do here, we will each one go to his home. Jean Pierre, the chief, supported the proposition of Victor; then Malkapsi became furious. I did not at the time know why. I found out later that he wished all to go to the camp of Vincent to talk over their affairs. Malkapsi slapped Jean Pierre, and struck Victor with the handle of his whip. I seized the infuriated man; a few words sufficed to calm him. I set out then with a few

chiefs to announce at the camp that all was tranquil; a half hour or an hour afterwards, what was my surprise to learn that they were fighting. I had, well indeed, to ask for a horse; there was in the camp only old men and women; it was about 3 o'clock when they brought me a heavy wagon horse. I set out, however, with the hope of getting there by night, when I was met by an Indian, who told me it was useless to fatigue myself, the Indians are enraged at the death of their people, they will listen to no one, whereupon I returned to my tent, the dagger in my heart. The following is the cause of this unhappy conflict as it has been related to me: The parents of Malkapsi, irritated and ashamed of his passion, said to him: "what do you do? you maltreat your own people! if you wish to fight, behold your enemies," (pointing to the troops;) then saying: "Oh, well, let us go and die," they ran towards the troops; I do not think there was more than a dozen of them. The affair did not become serious until Jacques, an excellent Indian, well beloved, and Zacharia, brother-in-law of the great chief Vincent, had been killed; then the fury of the Indians knew no bounds. The next day I asked those that I saw "What provocation have you received from the troops?" "None," said they. "Then you are only murderers, the authors of the death of your own people." "This is true; the fault can in no way be attributed to the soldiers; Malkapsi is the cause of all the evil." But they were not all so well disposed. When I asked others what the soldiers had done to them, they replied to me: "And what have we done to them, that they should come thus to seek us; if they were going to Colville," said they, "why do they not take the road, no one of us would then think of molesting them. Why do they go to cross the Nez Percé so high up? Why direct themselves in the interior of our country, removing themselves further from Colville? Why direct themselves, then, upon the place, where we were peaceably occupied in digging our roots? Is it us who have been to seek the soldiers, or the soldiers who have come to fall upon us with their cannon?" Thus, although they avow that they fired first, they pretend that the first act of hostility came from the troops. I asked them if they had taken scalps. They told me no, with the exception of a small piece that had been taken by a half fool. I asked them, also, if they had interred the dead. They replied that the women had buried them, but that the Pelouses had opened the graves which were at the encampment. It is then, also, that the Indians told me: We see now that the father did not deceive us when he told us that the soldiers wished peace. We forced them to fight; we fired a long time upon them before they answered our fire. As to the actual disposition of the Indians (Cœur d'Alenes), I think they can be recapitulated as follows: 1st. Regret for what has happened; all protesting that there was nothing premeditated; seeing that all the chiefs and the nation in general were decided upon peace; it was an accident that brought to life the anger of the older men. 2d. Disposition to render up what they have taken from the troops, in order to have peace. 3d. If peace is refused them, determination to fight to the last. I knew, from Colonel Steptoe, that his guide

had told him he was conducting him to Colville by the nearest road. Now that the guide mistook himself so grossly, is absurd to suppose. It appears necessary to conclude that in conducting the troops straight upon the camp of the Indians, he had design. It cannot be supposed that he ignored the irritation that the presence of the troops would produce upon the Indians; and as for the rest, the intriguing of this guide is well known. I see no other way to explain his conduct, than to say he laid a snare for the Cœur d'Alenes, whom he wished to humiliate, and that seeing afterwards the troops fall in the ditch that he had dug for others, he has done everything possible to draw them from it. The Cœur d'Alenes say, also, that it was cried to them from the midst of the troops: "Courage! you have already killed two chiefs;" that one of the Nez Percés who had followed the troops, came back to say to his people: It is not the Cœur d'Alenes, but, indeed, the soldiers who killed the two Nez Percés. because they said that they wished to save themselves on the side of the Indians; neither the Cœur d'Alenes, nor the Spokanes, nor the Chaudries, the Pend d'Oreilles, and the Tetes Plattes had spilt white blood; they pride themselves for it. If the war commence now, it is probable it will terminate only by the extermination of all these tribes, for their country is so difficult of access that it will be impossible to terminate it in a year or two, and almost equally impossible that it continue without all these tribes, including the Pieds Noirs taking part in it. When Governor Stevens was to see the Pieds Noirs to make a treaty with them, they said to our Indians: Until now we have quarrelled about one cow, but now we are surprised by a third; we will unite ourselves against him; if the Americans attack you, I will aid you; if they attack me, you will aid me. The war will cost thousands of lives, and all for an affair unpremeditated, and for which the Indians feel much regret. You will easily believe me, my reverend father, when I tell you I would purchase back with my life this unhappy event; not on my own account; I have been, and will be, much slandered; but what are the judgments of man to me, when God is my witness that I have done everything in my power to preserve peace? Your reverence knows very well that we have always threatened our Indians to quit them if they exhibit themselves hostile against the whites. They expect to see themselves abandoned; I have told them positively we will go. To quit them, actually would be to deliver them to the deceit of Kamiakin, and to light, I think, a universal war throughout the whole country. What pains me is to see the ruin of so many good Indians. What breaks my heart, is to see Colonel Steptoe, the zealous protector of Indians, exposed to the blame which ordinarily attaches itself to bad success; however, in the eyes of reflecting men, who know his situation, his retreat will do him infinite honor. It is not, I think, the first officer you will meet who could thus have drawn himself out from so bad a situation, surrounded by an army of ferocious beasts, hungry after their prey; of Indians sufficiently numerous to relieve each other, and who had always the means of procuring fresh horses. It appeared impossible that the troops could escape. Besides, the plan of the In-

dians was not to give them any rest until they had crossed the *Ner Percé*; the *Spokanes* were to be there early on the morning of the eighteenth to relieve the *Cœur d'Alenes*. In a position so critical, the colonel deceived the vigilance of his enemies, and throwing them his provisions, as an inducement to delay, he defeated their plan. He foresaw, without doubt, that the Indians on the one hand had let him take the advance, and on the other tempted by the booty abandoned the pursuit; so that if the troops have escaped, they owe it to the sagacity of the colonel. At the mission they were on the point of having a tragedy. Four Americans had arrived there with some half breeds and Canadians. After my departure to go to see the colonel from Colville, they went to the Flathead country. On the evening of the 18th the news reached them of the battle, and of the death of *Jacque*, *Zacary* and *Victor*. Immediately the women commenced to cry that it was necessary to avenge their deaths. Our two brothers got wind of what was passing. Whilst brother *McGeon* harranged them at his best to try and bring them back to humane sentiments, the good old *Francois* ran with all his might around the marsh, through water and brushes to their encampment, to inform them of the danger. They immediately hid themselves. The next day, the nineteenth, one of them came back to the encampment, saying he would as soon die by the hands of the Indians as by starvation in the woods. The half breeds saved him by saying he was not an American, but a Dane. The Indians were now ashamed of their conduct. *Adrian*, who had been one of the most ardent, showed himself afterwards one of the most faithful; he came to warn us when there was any new danger. The Indians told the half breeds to go and seek the Americans, who were miserable in the woods. One of the Indians opposed it. He since declared to me that his anger was not yet allayed, and that he was afraid of being carried away by his passion to commit some bad deed. In fact, the Americans who came in in the evening were very near being killed. *Adrian* having warned us that his life was in danger, we made him come to our house. They are all in safety now. No person has aided us in saving them more than the Indian *Bonaventure*. When I had set out, he had gone to accompany them to *Clark's river*, showing them a new road, the ordinary road being still impracticable.

Je suis avec respect, mon révérend père, votre tres humble serviteur,

P. JOSET, S. J.

Having completed his negotiations with the *Cœur d'Alenes*, the colonel now determined to move again towards the *Spokane* country. and to visit the battle-ground of *Colonel Steptoe*, to there recover the two 12-pounder howitzers lost in his engagement.

Everything having been perfected, and finding that our direct route lay along the road to the south of the *Cœur d'Alene lake*, we resumed our march, leaving the mission on the morning of the 10th of September. The morning was dark and cloudy, with a slight sprinkle of rain; but as our men and animals were well rested and recuperated,

we heeded it but little. Our route lay down the right bank of the Cœur d'Alene river, the trail leading for a mile and a half through small open prairies, when it reached the base of a wooded hill, forming a spur running east and west. This hill is neither high nor difficult, but, on account of the timber, requires some work in order to make a good road. There will be some slight work before reaching this point. I have entered with somewhat greater detail regarding this portion of the route and country, as it is over a part of this country that the proposed military road from Fort Walla-Walla to Fort Benton will pass.

Leaving then this hill referred to, and passing through a prairie bottom, we reach a slough that needs bridging; timber is near at hand.

Leaving this and travelling along the slough for a short distance, we soon reach a second and somewhat more difficult side hill that will require work.

The trail passes along the side hill, but a good road can, I think, be cut through the timber at the foot of the hills. This then brings us to a prairie bottom, which, during high water, is a lake or marsh. This compels the road to keep again along the side hills for some distance, and may probably require that a small portion of it be corduroyed. The road then passes through timber requiring work. The timber is dense and large, but the valley bottom, if it be not too wet, should be preferred to the side hill.

In this length *it is possible* that crossing the stream may be found to be beneficial; but as the Cœur d'Alene river is twenty-five feet deep and eighty yards wide nearly throughout its whole length, as few bridges as can be got along with should be made, and a preferable location given the road by keeping along or near the foot-slopes of the hills that bound the valley. A special examination is required here.

Passing then over some rocky points and through small clumps of timber, we again emerge upon the open prairie, where the road is now good. For the remainder of this day we continued along the right bank of the Cœur d'Alene river to our camp, $14\frac{1}{8}$ miles from the mission.

Throughout the bottom of the valley we find a somewhat elevated strip of land along the immediate bank of the river, and it is possible that this will afford throughout the length of the valley the best location for a good military road.

During the high water or freshets the bottom of the valley is overflowed, and the ground being flat, with this elevated strip along the edge of the river, the water cannot run off, but is lost by evaporation, so that the road, unless it be late in the season, must be always wet. It has been suggested—and with what truth it might be well to examine at some future day—that at the upper falls of the Spokane, some ten miles below the Cœur d'Alene lake, the river is confined within a narrow cañon of rock, with a fall of from eight to ten feet; that could this be blasted away, it would lower the general level of the water not only of the lake, but of the Cœur d'Alene and St. Joseph's rivers—its two feeders—some eight or ten feet. Neither of these feeders have a current, and both are twenty-five feet deep, and

through this length of ten miles to the Cœur d'Alene lake there is little or no current, and hence, the falls being removed and the current increased, the volume of water in the lake and rivers must become diminished, and thus the great overflows be prevented. Should this, upon examination, prove practicable, it would not only be the greatest and most economical manner to build a road—by drainage of the prairie bottoms, thus giving the best location—but it would also be the means of reclaiming much valuable land along these rivers that, with their present richness, would produce inexhaustible crops. It is possible, however, that this dyke of rock or barrier that constitutes the falls is only the terminus of a long ledge of rock higher than the general level of the lake bottom; and hence the mere blasting away of this dyke might not, after all, be of special advantage, but might require a channel to be made through the whole length from the lake. Still it is worthy of examination. When the day comes when this mountain region shall become thickly populated, then, probably, an improvement of this character will become imperative.

I would here remark that, if a practicable route could be found by following up the valley of the Pelouse, from its position it would be far preferable to any route to its north or south with which to connect with the Hellgate and Little or Big Blackfoot Passes. It is reported by the Indians, and confirmed by the Jesuit fathers, that a good road can be found thence to the waters of the Missouri. It is certainly worthy an exploration. Later in the campaign I directed Father Joset to send some friendly Cœur d'Alenes over the route, and his report to me goes to show that the whole line is direct and easy, with grass, wood, and water, and no very great amount of work to be done on the whole line to the Bitter Root or St. Mary's valley; and as this line is in such intimate connexion with the Cœur d'Alene route, it should be by all means examined by some competent engineer. A route by this pass would not only be more direct and shorter from Walla-Walla, but, in view of the many swamps and marshes to be avoided along the St. Joseph's and Cœur d'Alene rivers, rendering a road somewhat difficult of construction, this becomes truly a line worthy of a full and detailed examination.

Before leaving the mission, Mr. Schon, my faithful and indefatigable assistant, who there made the truthful sketch of the mission village, was directed to proceed down the Cœur d'Alene river in a barge, to examine, map, and report upon the Cœur d'Alene river, who, arriving almost simultaneously with ourselves at our camp, reports the distance, including all the bends and windings, $17\frac{1}{2}$ miles from the mission to the crossing at which we had encamped. He reports the river with a sluggish current, 25 feet deep, 60 yards wide, and water of a deep blue color; banks 10 feet high, and steep, and lined with willow and occasionally a few pines and cotton-wood, and the hills bounding the valley on either side densely timbered with the pine and fir. The map of this river is from his work, and may be relied upon as faithful and accurate. The stream is filled with the red and black speckled trout, and the numerous lakes along and connecting with it filled with ducks and water fowl.

This whole region is noted for its abundance and variety of large and small game. Black and grizzly bear, deer and elk principally abound. Thus provided with game, these mountain Indians, in their strong position, are well calculated to give us annoyance and trouble, and thus hold the key to one of the principal mountain passes; they should be conciliated on just and equitable grounds.

The day was rainy and unpleasant, and making camp at 1 p. m. on the right bank of the Cœur d'Alene, at the crossing, we found a wet couch for the night. About ten miles above our camp of this day we crossed a small slough, which we kept to our right. This connects with a lake just in rear of our camp, of three-quarters of a mile long and half a mile wide, and this connects with the main river by a small stream. A lake, some two miles long and one broad, lay also opposite to our camp on the left bank of the river. The Cœur d'Alene valley at this point is about two miles broad, and lined on either side by high ranges of pine-clad hills, that on the right being somewhat rocky. At our camp we found good grass, wood, and water. Many of the Cœur d'Alenes had descended the river to assist us in crossing, the principal portion of our baggage being crossed in a large barge from the mission and two of the "Sweetser boats." These last had been made under the direction of that indefatigable and zealous officer, Captain Kirkham, under whose guidance the crossing was effected. These boats consist of a frame of three parts—a bottom and two sides—and the different parts of these connected by hinges; thus enabling them to be folded up and packed on a mule; one mule will carry one of these boats packed. When the frame is fitted together, a strong, thick canvas is stretched over the whole, and it makes a light, convenient, and elegant boat. We found that the canvas leaked a little; but Captain Kirkham suggested an improvement by having the canvas previously prepared so that it would be impervious to water. Lieutenant Sweetser, of the 1st dragoons, first suggested the plan, and hence it is called the "Sweetser boat."

These boats answer very well for crossing small streams where the current is not rapid, but for larger streams with rapid currents I doubt as to their special advantages. The boat that we used was some five feet broad and nine feet long. They should be about five feet broad and fifteen feet long, and would then answer very well for military purposes, either for pack or wagon trains, and are capable of transporting heavy laden teams or wagons across streams with great facility, provided there be no rocks or snags in the way. The command having commenced the crossing on the 18th, we had everything on the left bank by 1 p. m. of the 19th, when we encamped on a beautiful prairie at the edge of a pine thicket, finding excellent grass for our animals. Resuming our march at 7 a. m. on the morning of the 20th, our road for a mile and three-quarters lay along the left bank of the Cœur d'Alene river, through a level prairie bottom, when we reached a sharp rocky point at a lake making to the right of our trail. Here our direction became changed to the south by ascending the rocky point and passing, for a distance of three miles, along the edge

of the lake and on a bench 40 to 50 feet high above it through the thick timber.

There will be work through this timber; and in order to ascend this rocky point from the prairie bottom with facility and with an easy grade for wagons, a staging or bridge can be made from the timber near at hand. At the end of three miles we began the ascent of a somewhat difficult hill or mountain slope, rocky, rugged, and thickly wooded; but gaining the summit we emerged upon an open, bare side hill which exposed, to the right of our trail, a deep cañon with rocky sides, the bottom of which was densely timbered with the pine and cotton-wood. This cañon is at the head of the lake above referred to, which is a mile and a quarter long and near half a mile wide, and bounded on the west by high, steep, and pine-clad hills, the pines coming down to the water's edge. This lake connects with the Cœur d'Alene river by a small river, and the river thence retains its general characteristics. There are four very good crossings of the Cœur d'Alene between the mission and this point.

On examining the cañon referred to above we found it to be of easy descent, and I think a good road might be cut through the timber, which would avoid the steep ascent now made where the trail passes.

Should the hill not be avoided thus, then wagons may pass to the right. It requires examination before location. From the head of the cañon our trail entered and continued through to open pine timber until we reached the summit of the low divide between the St. Joseph's and Cœur d'Alene rivers; reaching which we enjoyed the beautiful panorama of the St. Joseph's valley. The St. Joseph's river, fringed with willow and cotton-wood, gracefully winds through a valley three-quarters of a mile wide, and extending to the east till lost far in the distance by the spurs making down from either side. The valley is bound by high pine-clad hills which gives the whole view, as seen from the hill-tops, a most beautiful and magical effect. The descent to the valley of the St. Joseph's is steep and abrupt, and free from timber. A better road could, I think, be found more to the west upon examination. At the foot of this hill we saw the site and wreck of the old Mission of the Sacred Heart, established in 1842, but which, in consequence of the overflow of the valley, was abandoned and the present site selected as the most eligible and advantageous to the Indians. Crossing the valley and following along the right bank of the St. Joseph's for four miles and a half by a good prairie road, we reached the crossings of the river at a point where a slough, emptying a lake to the south of the St. Joseph's, and the St. Joseph's unite. Here is formed a narrow tongue of land which I am told is not overflowed land, which might afford a very good road by following it for four miles and a half, and then bridging the river. In going westward the marshy and swampy places are avoided.

In consequence of the whole country near this point being low and flat, we find a number of lakes dotting the valley at as many points.

We made to-day 13 miles, encamping on the right bank, with fuel and plenty of grass, but the latter being of an inferior quality.

Mr. Sohon, continuing his examinations of the water courses from our camp on the Cœur d'Alene river, descended that river in the barge to the Cœur d'Alene lake, and thence to the St. Joseph's, reaching our camp late in the afternoon. He describes the river as retaining its same general characteristics to the Cœur d'Alene lake, where he found the water fifty-five feet deep. On entering the St. Joseph's at its mouth he found its water 25 feet deep, which depth it retained to our camp, where he ended his work. He was enabled to collect a number of important facts regarding the river, the position of the mountains and lakes, and made a very complete map of that section which is incorporated in the second section of our general map.

The pack trains having crossed the St. Joseph's on the evening of the 20th September, under the general direction of Captain Kirkham, assistant quartermaster, the colonel determined, on the morning of the 21st, to cross the remainder of the command, and to move into a suitable camp where better grass for our animals could be had.

With this view, and in order to meet the Spokanes, supposed to be on the Nedwhuald creek, we moved by detachments from the crossing of the St. Joseph's on the morning of the 21st; at this point the road forks, one passing to the south to the Camass ground of the Cœur d'Alenes; that to the north being the one we had concluded to follow.

This road, leading through the bottom for seventy yards, ascended the steep slope of a pine-clad hill 1,500 feet high, gaining the summit of which we had a fine view on all sides for miles in the distance. To the east lay the beautiful valley of the St. Joseph's, with the western spurs of the Blue mountains at its head, dotted here and there with silvery lakes. To the north and south lay the high sides of the pine-clad mountains of the Cœur d'Alene range and spurs of the Bitter Root, while a broad belt of dense timber lay to the west, beyond which lay the immense swelling ocean of prairie to complete a picture already truly grand. Leaving the summit and descending this slope for half a mile through small fallen timber, we gained an open prairie bottom which we followed for four miles to a small clump of small cotton-wood, where, finding some pools of water and sufficient grass for our animals, we encamped for the night, our march being only six miles.

Resuming our route at an early hour on the morning of the 22d, for two miles we passed through the open pine timber, when we reached the open prairie, having to our right and left, in a fan-shaped form, ridges covered with open pine timber.

Following this trail for a distance of twenty-one miles to the Lahtoo or Nedwhuald creek, we encamped for the night, the road being over a rolling prairie which at every point was well covered with excellent bunch grass. Along the route we found, at convenient distances, springs and pools of water sufficient for our men and animals. To our extreme right lay a high pine-clad range of hills or mountains, to the north of which flowed the Spokane river. In front of us, towards the end of the march, the pines again appeared; and on reaching the Lahtoo we found ourselves on the edge of quite an extensive pine forest. We remained in camp on the 23d to hold conversations with

the Cœur d'Alenes, Spokanes, and a few Pelouses who had come in with them. These men were under Vincent Garry Polatken, Big Star Skolhalt and a few other of the principal chiefs. It was on this day that Owli, a Yakima chief, came into our camp, and who, being made prisoner, at a later day in the campaign, while attempting to escape, was shot near the Trucamon river. His son Traltian and a number of Pelouses at this same camp expiated their many crimes upon a gallows erected for the purpose. The colonel, determining to remain with the main body of his command at this camp, detached Major Grier with three companies of dragoons to visit Steptoe's battlefield to recover the guns there lost and to collect the bones and remains of the officers and men who fell in that memorable contest.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp on the Spokane river, W. T., 16 miles above the "Falls."
 September 10, 1858.

SIR: I have this morning received a despatch from Father Joset, at the Cœur d'Alene mission. He says that the hostiles are *down* and suing for peace; that there was great rejoicing amongst the friendly Indians when they heard of our two victories over the hostiles; had we been defeated, all those who did not join the hostiles would have been sacrificed.

I have just sent off Father Joset's messenger. I said to the father that he could say to those who had not been engaged in this war that they had nothing to fear—that they should remain quiet, with their women and children around them; to say to all Indians, whether Cœur d'Alenes or belonging to other tribes, who have taken part in this unhappy war, that if they are sincere and truly desire a lasting peace, they must all come to me with their guns, with their *families*, and all they have, and trust entirely to my mercy; that I promise only that no life shall be taken for acts committed during the war. I will then tell them what I do require before I grant them peace. As I reported in my communication of yesterday the capture of 800 horses on the 8th instant, I have now to add that this large band of horses composed the entire wealth of the Pelouse chief Tilco-ax. This man has ever been hostile; for the last two years he has been constantly sending his young men into the Walla-Walla valley, and stealing horses and cattle from the settlers and from the government. He boldly acknowledged these facts when he met Colonel Steptoe, in May last. Retributive justice has now overtaken him; the blow has been severe but well merited. I found myself embarrassed with these 800 horses. I could not hazard the experiment of moving with such a number of animals (many of them very wild) along with my large train; should a stampede take place, we might not only lose our captured animals, but many of our own. Under those circumstances, I determined to kill them all, save a few for service in the quartermaster's department and to replace broken down animals. I deeply regretted killing these poor creatures, but a dire necessity drove me to it. This work of slaughter has been going on since 10 o'clock of yesterday,

and will not be completed before this evening, and I shall march for the Cœur d'Alene mission to-morrow.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Assistant Adjutant General,

Headquarters Department of the Pacific, Fort Vancouver, W. T.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp at the Cœur d'Alene Mission, W. T., September 15, 1858.

SIR : I marched from my camp on the Spokane river, 16 miles above the falls, on the morning of the 11th instant; after fording the river, our line of march was pursued along its right bank for fourteen miles, when I struck the Cœur d'Alene lake and encamped. Resuming our march on the 12th, we soon lost view of the lake on our right, and struck into the mountains, with a forest on either hand, and a trail which only admitted the passage of a single man or animal at a time. After marching twelve miles I found a small prairie, with a fine running stream of water, and encamped.

Marching early on the 13th, we found the trail infinitely worse than that of the previous day; passing through a dense forest, with an impenetrable undergrowth of bushes on both sides, and an almost continuous obstruction from fallen trees, our progress was necessarily slow, having to halt frequently and cut away the logs before our animals could pass over. The column and pack train could only move in single file, and extended from six to eight miles, but it was perfectly safe, the front and rear were strongly guarded, and nature had fortified either flank. No communication could be had with the head of the column and its rear, and thus we followed this lonely trail for nineteen miles to this place. The rear of the pack train with the guards did not reach here until 10 o'clock at night. I found the Indians here in much alarm as to the fate which awaited them, but happily they are now all quieted. Father Joset has been extremely zealous and persevering in bringing in the hostiles. They are terribly frightened, but last evening and to-day they are coming in quite freely with the women and children, and turning over to the quartermaster such horses, mules, &c., as they have belonging to the United States.

The hostile Spokanes have, many of them, gone beyond the mountains and will not return this winter. The Pelouses, with their chiefs Kamiaken and Til-co-ax, are not far off, but it is doubtful whether they will voluntarily come in. If they do not, I shall pursue them as soon as I can settle with the Cœur d'Alenes.

The chastisement which these Indians have received has been severe but well merited, and absolutely necessary to impress them with our power. For the last eighty miles our route has been marked by

slaughter and devastation; 900 horses and a large number of cattle have been killed or appropriated to our own use; many horses, with large quantities of wheat and oats, also many caches of vegetables, kamas, and dried berries, have been destroyed. A blow has been struck which they will never forget.

I hope to march from this place on the 18th or 19th in the direction of Colonel Steptoe's battle-ground, having in view to intercept, if possible, the Pelouses, and also to hold a meeting with several bands of the Spokanes, if they can be collected.

The troops are in fine health and spirits. I have provisions which, by economy and a slight reduction of the ration, will last until the 5th of October. We shall soon feel the want of bootees very sensibly. The days are warm, but ice a quarter of an inch thick is made every night.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Assistant Adjutant General,

Headquarters Department of Pacific,

Fort Vancouver, W. T.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,

Camp 35 miles SW. of Cœur d'Alene's Mission, W. T.,

September 21, 1858.

SIR: I have the honor to submit a *resumé* of operations since my communication (No. 17) of the 15th instant.

On the 17th instant the entire Cœur d'Alene nation having assembled at my camp near the mission, I called them together in council. I then stated to them the cause of my making war upon them. I made my demands specifically: 1st, that they should surrender to me the men who commenced the attack on Lieutenant Colonel Steptoe, contrary to the orders of their chiefs; 2d, that they should deliver up to me all public or private property in their possession, whether that abandoned by Lieutenant Colonel Steptoe, or received from any other source; 3d, that they should allow all white persons to travel at all times through their country unmolested; 4th, that, as security for their future good behavior, they should deliver to me *one* chief and *four* men with their families, as hostages, to be taken to Fort Walla-Walla.

After a brief consultation, they announced their determination to comply with all my demands, in every particular, in sincerity and good faith.

All the Cœur d'Alene nation, with the exception of some six or eight, were present at the council; and as an evidence that they had previously determined to make peace on any terms, they brought with them their families, and all the property they had belonging to

the government or to individuals, ready and willing to submit to such terms as I should dictate.

The chiefs and headmen came forward and signed the preliminary articles of a treaty of peace and friendship, and in the course of the day fulfilled, as far as practicable, my demands by delivering up horses, mules, and camp equipage.

The chiefs and headmen expressed great grief and apparently sincere repentance for their misconduct, which had involved them in a war with the United States. I have never witnessed such a unanimity of feeling nor such manifestations of joy as was expressed by the whole Cœur d'Alene nation—men, women, and children—at the conclusion of the treaty. *They know us, they have felt our power*, and I have full faith that henceforth the Cœur d'Alenes will be our staunch friends.

I marched from the Cœur d'Alene's mission on the morning of the 18th, having with me the prisoners, hostages, and many other Cœur d'Alenes, as guides, &c. Our route lay down the right bank of the Cœur d'Alene river for thirteen miles, where I encamped at a point where the river has to be ferried. It occupied most of the 19th in crossing the troops, animals, and stores, assisted by the Indians with their canoes.

Leaving camp on the 20th. we pursued our march still in the mountains, and the trail obstructed by fallen trees, until we struck the St. Joseph's river, at thirteen miles, and encamped. Again we found a river which could not be forded, and our two boats, with the Indian canoes, were instantly called into requisition. By sunset the general supply train was crossed, and recommencing at daylight this morning, by 12 o'clock in the rear of the column was ready to move.

I shall march to-morrow for the vicinity of Lieutenant Colonel Steptoe's battle-ground to obtain the abandoned howitzers, and in the expectation of meeting the Spokanes and Pelouses.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Assistant Adjutant General,

Headquarters Department of the Pacific,

Fort Vancouver, W. T.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,

Camp on the Ned-whauld River, W. T., Lat. 47° 24' N.,

September 24, 1858.

SIR: I have the honor to submit a continuation of the history of my operations since the 21st, the date of my last communication, (No. 18.)

Marching from my camp on the morning of the 22d, at the distance of three miles we emerged from the woods on to the open prairie, and after pursuing a west-southwest course for eighteen miles over a rolling country thinly studded with pines, we reached this place and encamped.

Before reaching here I was advised that the whole Spokane nation were at hand, with all their chiefs, headmen, and warriors, ready and willing to submit to such terms as I should dictate.

Yesterday at 10 o'clock a. m. I assembled the Indians in council, and after enumerating the crimes they had committed, I made the same demands upon them which had been made upon the Cœur d'Alenes.

Speeches were made by the principal chiefs. They acknowledged their crimes, and expressed great sorrow for what they had done, and thankfulness for the mercy extended to them. They stated that they were all ready to sign the treaty and comply in good faith with all its stipulations.

The chiefs Garey, Polatkin, and Mil-kap-si were present. The first two are Spokanes, the last is a Cœur d'Alene. It will be recollected that each of those men wrote a letter to the general in August last. That of Mil-kap-si was particularly significant, haughty, and defiant in tone, and willing to make peace if *we* desired it, but unwilling to take the initiative. This man was not present when the treaty was made with the Cœur d'Alenes. Now he comes in and humbly asks for peace, and that he may be allowed to sign the treaty. I granted his request, but I took occasion before the whole council to remind him of his letter to General Clarke, and to say to him that *we* had not asked for peace.

Amongst this assemblage of Spokane Indians were representatives from the Calespelles and some other small bands, who stated that they had not engaged personally in the war, but that some of their young men had been in the fights. I did not make any special treaty with them, but told them that they might consider themselves on the same footing as the Spokanes, so long as they refrained from war and conformed to the articles of the Spokane treaty.

The entire Spokane nation—chiefs, headmen, and warriors—expressed great joy that peace was restored, and promised, before the Great Spirit, to remain our true friends forevermore. They have suffered, they have *felt* us in battle, and I have faith that they will keep their word.

Enclosed herewith are copies of the treaties made with the Cœur d'Alenes and Spokanes.

I cannot close this communication without expressing my thanks to Father Joset, the superior of the Cœur d'Alene's mission, for his zealous and unwearied exertions in bringing all these Indians to an understanding of their true position. For ten days and nights the father has toiled incessantly, and only left us this morning after witnessing the fruition of all his labors.

Very respectfully, your obedient servant,

G. WRIGHT,
Colonel 9th Infantry.

Major W. W. MACKALL, *Assistant Adjutant General,*
Headquarters Department of the Pacific, Fort Vancouver, W. T.

This detached command, starting early on the morning of the 24th, passed over a series of rolling prairie hills, and in two miles reached a narrow strip of cotton-wood, with a broad belt of pine timber to our right. This same character continued for a distance of eight miles, when we reached a prairie bottom some 300 yards wide, lined on either side by walls of basaltic rock 100 feet high, in which was the dry bed of a lake, from which flows, in the spring season, a small creek that flows into the Ingossomen creek. At this point the pine timber had become more sparse and much scattered, save a few detached clumps where it was more dense. At eight and a half miles from the Lahtoo, this prairie bottom, which runs north and south, is intersected by a cañon running at right angles to it and fifty yards wide. It was at the southwest corner of this intersection that the rear guard of Colonel Steptoe's command, under Lieutenant Gaston, was fired upon in the retreat of May 17, 1858. The trail that Steptoe followed, which, at the intersection spoken of, was to the west of a small dry willow creek, in a mile to the south crosses it to the east and ascended a hill some 250 feet high where a first position of the howitzers was taken.

Gaining the summit of this hill we had a fine view of a large portion of the ground upon which Colonel Steptoe's command operated.

Lieutenant Gregg commanding in advance, with Lieutenant Gaston on the hills to the left, Captain Taylor on the right, with Sergeant Williams in rear, the retreat was made along the southern portion of the hill where they entered the valley of the Ingossomen creek. This last stream rises in a range of low prairie hills and flows in a northerly direction until, reaching the base of the hills, it makes a sharp bend to the south and west. This stream at this season has no current, is two feet deep, fifteen yards wide, and water lying in long canal-shaped basaltic basins. From this hill westwards the pines continued in its valley and near its border; while to the south nothing save a few clumps of scattered cotton-wood along the banks of the Ingossomen were to be seen.

The valley of this creek is about 300 yards wide, and lined on either side by ranges of prairie hills 200 feet high; and following the general direction of the stream for two miles, when, bending more to the east, we reach the point where the final and decisive stand of Steptoe was made, and from which he commenced his retreat. The hill upon which the final position was taken was 150 feet high. The howitzers were placed near the summit—one to defend the hills beyond, and one near the crest to guard the communication with the water.

It is not my province or intention to here give any detailed account regarding the position and affairs of that memorable contest, but simply to relate the part we took in our present mission to the battle-field.

But, for the information of those who never knew all the particulars, and as it is somewhat germane to our own duties, I herewith append Colonel Steptoe's own official reports regarding the matter, extracted from the published official communication of the Secretary of War to the present Congress:

FORT WALLA-WALLA, *May 23, 1858.*

MAJOR: On the 2d instant I informed you of my intention to move northward with a part of my command. Accordingly, on the 6th I left here with companies C, E, and H, 1st dragoons, and E, 9th infantry; in all, five company officers, and one hundred and fifty-two enlisted men. Hearing that the hostile Pelouses were near Al-pon-on-we, in the Nez Percés land, I moved to that point, and was ferried across Snake river by Timothy, a Nez Percés chief. The enemy fled towards the north, and I followed leisurely on the road to Colville. On Sunday morning, the 16th, when near the To-hoto-nim-me, in the Spokane country, we found ourselves suddenly in presence of ten or twelve hundred Indians of various tribes—Spokanes, Pelouses, Cœur d'Alenes, Yakimas, and some others—all armed, painted, and defiant. I moved slowly on until just about to enter a ravine that wound along the bases of several hills, which were all crowned by the excited savages. Perceiving that it was their purpose to attack us in this dangerous place, I turned aside and encamped, the whole wild, frenzied mass moving parallel to us, and, by yells, taunts, and menaces, apparently trying to drive us to some initiatory act of violence. Towards night a number of chiefs rode up to talk with me, and inquired what were our motives to this intrusion upon them? I answered, that we were passing on to Colville, and had no hostile intentions towards the Spokanes, who had always been our friends, nor towards any other tribes who were friendly; that my chief aim in coming so far was to see the Indians and the white people at Colville, and, by friendly discussion with both, endeavor to strengthen their good feelings for each other. They expressed themselves satisfied, but would not consent to let me have canoes, without which it would be impossible to cross the Spokane river. I concluded, for this reason, to retrace my steps at once, and the next morning (17th) turned back towards this post. We had not marched three miles when the Indians, who had gathered on the hills adjoining the line of march, began an attack upon the rear guard, and immediately the fight became general. We labored under the great disadvantage of having to defend the pack train while in motion and in a rolling country peculiarly favorable to the Indian mode of warfare. We had only a small quantity of ammunition, but, in their excitement, the soldiers could not be restrained from firing it in the wildest manner. They did, however, under the leading of their respective commanders, sustain well the reputation of the army for some hours, charging the enemy repeatedly with gallantry and success. The difficult and dangerous duty of flanking the column was assigned to Brevet Captain Taylor and Lieutenant Gaston, to both of whom it proved fatal. The latter fell about twelve o'clock, and the enemy soon after charging formally upon his company, it fell back in confusion and could not be rallied. About a half hour after this Captain Taylor was brought in mortally wounded; upon which I immediately took possession of a convenient height and halted. The fight continued here with unabated activity; the Indians occupying neighboring heights and

working themselves along to pick off our men: The wounded increased in number continually. Twice the enemy gave unmistakable evidence of a design to carry our position by assault, and their number and desperate courage caused me to fear the most serious consequences to us from such an attempt on their part. It was manifest that the loss of their officers and comrades began to tell upon the spirit of the soldiers; that they were becoming discouraged, and not to be relied upon with confidence. Some of them were recruits but recently joined; two of the companies had musketoons, which were utterly worthless in our present condition; and, what was most alarming, only two or three rounds of cartridges remained to some of the men, and but few to any of them. It was plain that the enemy would give the troops no rest during the night, and they would be still further disqualified for stout resistance on the morrow, while the number of enemies would certainly be increased. I determined, for these reasons, to make a forced march to Snake river, about eighty-five miles distant, and secure the canoes in advance of the Indians, who had already threatened to do the same in regard to us. After consulting with the officers, all of whom urged me to the step as the only means, in their opinion, of securing the safety of the command, I concluded to abandon everything that might impede our march. Accordingly, we set out about 10 o'clock in perfectly good order, leaving the disabled animals and such as were not in condition to travel so far and so fast, and, with deep pain I have to add, the two howitzers. The necessity for this last measure will give you, as well as many words, a conception of the strait to which we believed ourselves to be reduced. Not an officer of the command doubted that we would be overwhelmed with the first rush of the enemy upon our position in the morning; to retreat further by day, with our wounded men and property, was out of the question; to retreat slowly by night equally so, as we could not then be in condition to fight all next day; it was therefore necessary to relieve ourselves of all incumbrances and to fly. We had no horses able to carry the guns over 80 miles without resting, and if the enemy should attack us *en route*, as, from their ferocity, we certainly expected they would, not a soldier could be spared for any other duty than skirmishing. For these reasons, which I own candidly seemed to me more cogent at the time than they do now, I resolved to bury the howitzers. What distresses me is, that no *attempt* was made to bring them off; and all I can add is, that if this was an error of judgment it was committed after the calmest discussion of the matter, in which, I believe, every officer agreed with me.

Enclosed is a list of the killed and wounded. The enemy acknowledge a loss of nine killed and forty or fifty wounded, many of them mortally. It is known to us that this is an under estimate, for one of the officers informs me that on a single spot where Lieutenants Gregg and Gaston met in a joint charge twelve dead Indians were counted. Many others were seen to fall.

I cannot do justice in this communication to the conduct of the officers throughout the affair. The gallant bearing of each and all

was accompanied by an admirable coolness and sound judgment. To the skill and promptness of Assistant Surgeon Randolph the wounded are deeply indebted.

Be pleased to excuse the hasty appearance of this letter; I am anxious to get it off, and have not time to have it transcribed.

I have the honor to be, very respectfully, your obedient servant,
E. J. STEPTOE,

Brevet Lieutenant Colonel United States Army.

Major W. W. MACKALL,

Assistant Adjutant General U. S. A., San Francisco.

Endorsement.

This is a candid report of a disastrous affair. The small supply of ammunition is surprising and unaccounted for. It seems that Brevet Brigadier General Clarke has ordered up all the disposable troops in California, and probably will further reinforce Steptoe's district by detachments of the 4th and 9th regiments of infantry; and, on the 29th ultimo, I gave instructions for sending the 6th or 7th regiments of infantry from Salt Lake valley across the Pacific and *via* Walla-Walla, if practicable, in preference to any route south of that.

Respectfully submitted to the Secretary of War.

WINFIELD SCOTT.

JULY 15, 1858.

Report of the killed, wounded, and missing in the battle at Te-hoto-nim-me, May 17, 1858.

COMPANY C, FIRST DRAGOONS.

Killed—Brevet Captain O. H. Taylor, private Alfred Barnes.

Mortally wounded—Private Victor Charles De Moy.

Severely wounded—Privates James Lynch and Henry Montreville.

Slightly wounded—Farrier Elijah R. Birch.

COMPANY E, FIRST DRAGOONS.

Killed—Second Lieutenant William Gaston.

Mortally wounded—First Sergeant William C. Williams.

Severely wounded—James Kelly, William D. Micon, and Harriet Sneckster.

Slightly wounded—James Healy, Maurice Henly, Charles Hughes, and John Mitchell.

COMPANY H, FIRST DRAGOONS.

Killed—Privates Charles H. Harnish and James Crozet.

Missing—First Sergeant Edward Ball.

COMPANY E, NINTH INFANTRY.

Severely wounded—Private Ormond W. Hammond.*Slightly wounded*—Privates John Klay and Gotleib Berger.

*Colonel Steptoe to Major Mackall.*FORT WALLA-WALLA,
May 28, 1858.

MAJOR: In my report of the 23d instant it was stated that five company officers were with my command in the late fight, but their names were omitted. They were as follows:

Captain C. S. Winder, in charge of the howitzers; Brevet Captain C. H. Taylor, 1st dragoons; Lieutenant D. McM. Gregg; Lieutenant James Wheeler, jr., upon whom the command of company C devolved at the fall of Captain Taylor; Lieutenant William Gaston, 1st dragoons.

It may be superfluous for me to say that each one of these officers discharged his duties with the truest courage; but I feel constrained to add that they displayed, throughout, the greatest zeal, cheerfulness, and coolness. It was, no doubt, due to the severe punishment which, by their exertions, the enemy received, that we were not pursued and attacked at the crossing of Snake river, where a bold attack must have been disastrous to us.

The other two commissioned officers with me were Assistant Surgeon Randolph, who was mentioned in my report, and Lieutenant H. B. Fleming, acting assistant quartermaster and acting commissary of subsistence.

Very respectfully, your obedient servant,

E. J. STEPTOE,
Brevet Lieutenant Colonel U. S. A., commanding post.

Major W. W. MACKALL,
Assistant Adjutant General U. S. A., San Francisco.

*Colonel Steptoe to Major Mackall.*FORT WALLA-WALLA,
May 23, 1858.

MAJOR: I received by last mail the order to furnish Lieutenant Mullan an escort of one officer and sixty-five soldiers.

Of course the present state of our relations with the northern tribes will make it impossible for Lieutenant Mullan to proceed with his survey.

In this connexion I may inform you that the fight with my command only committed the Indians to hostilities a little earlier, and probably

under more fortunate circumstances for us. A few minutes before the attack upon us, Father Joseph, the priest at Cœur d'Alene mission, joined me, and stated to me that most of the excitement among the tribes was due to mischievous reports that the government intended to seize their lands, in proof of which they were invited to observe whether a party would not soon be surveying a road through it. He added that the Cœur d'Alenes, Spokanes, and Flatheads had bound themselves to massacre any party that should attempt to make a survey. I do not doubt in the least the truth of this statement, and make no question that Lieutenant Mullan's party has been saved from destruction by late occurrences.

Very respectfully, your obedient servant,

E. J. STEPTOE,

Brevet Lieutenant Colonel U. S. A., commanding post.

Major W. W. MACKALL,

Assistant Adjutant General U. S. A., San Francisco.

Colonel Steptoe to Major Mackall.

FORT WALLA-WALLA,

May 29, 1858.

MAJOR: Since my return to this post the Indians in this vicinity, who began to show much restlessness, have become quiet again. Reports were busily circulated amongst them that my command had been utterly destroyed, and many of them were disposed to take advantage of our supposed condition.

I ought to advise you that, from the best information to be obtained, about half of the Spokanes, Cœur d'Alenes, and probably of the Flatheads, nearly all of the Pelouses, a portion of the Yakimas, and I think a small number of Nez Percés, with scattered families of various petty tribes, have been for some time, and are now, hostile.

It is impossible to say what force they can bring together, but of course they cannot keep together long a force of any size.

A good strong column of three or four hundred infantry, with two or three companies of mounted men, would be able to beat them, I think, under all circumstances, or else to disperse them thoroughly, which would have nearly the same effect. It is unfortunate that such a column cannot be sent out before the season for gathering roots has passed.

There is much doubt on my mind where the Indians obtained their ammunition, of which they had abundance. Some persons believe that the Cœur d'Alene priest furnished it; but I do not credit that. My impression is that it was obtained either from the Colville traders or the Mormons. The priest, in conversation with me, alluded to the report so injurious to his reputation, and added that it was a charge too monstrous for him to notice it in a formal way.

Of one thing the general may be assured, and that is, that the

tribes through whose lands the proposed road to Fort Benton will run are resolved to prevent it; and before even a survey can be made they will have to be chastised.

Very respectfully, your obedient servant,

E. J. STEPTOE,

Brevet Lieutenant Colonel U. S. A., commanding post.

Major W. W. MACKALL,

Assistant Adjutant General U. S. A., San Francisco.

The following letter written by an officer of Colonel Steptoe's command, Lieutenant Gregg, which is appended to the published report of Indian affairs, gives also in detail the character and spirit of that memorable Indian battle:

The fight with the Indians near the Pelouse river.

We are under a thousand obligations to some of our friends for the following information in reference to the recent fight with the Indians near the Pelouse river, on the 19th instant. We give the private letter of an officer who was engaged in the fight, and dated the 23d instant:

"On the 6th instant Colonel Steptoe, with C, E, and H companies, 1st dragoons, and twenty-five men of 9th infantry, with two mountain howitzers, left Fort Walla-Walla for Colville. The officers of the command were Colonel Steptoe, Captains Winder and Taylor, Lieutenants Wheeler, Fleming, Gaston, and Gregg. After marching eight days we reached the Pelouse river, and were about passing into the Spokane country when we were informed by Indians that the Spokanes would resist our entrance into the country. The Spokanes have always been regarded as friendly to the whites, and when we left Walla-Walla no one thought of having an encounter with them or any other Indians on the march.

"On Sunday morning, the 16th, on leaving camp, we were told that the Spokanes had assembled and were ready to fight us. Not believing this, our march was continued until about 11 o'clock, when we found ourselves in the presence of six hundred warriors in war costume. The command was halted for the purpose of having a talk, in which the Spokanes announced that they had heard we had gone out for the purpose of wiping them out; and if that was the case they were ready to fight us, and that we should not cross the Spokane river. The Indians were well mounted, principally armed with rifles, and were extended along our flank at the distance of one hundred yards. After some talk the colonel told us we would have to fight, and we immediately put ourselves into position to move to better ground, determined that the Spokanes should fire the first gun. After marching a mile we reached a sheet of water; it was decided to encamp and hold another talk with the Indians. Nothing resulted from this except the most insulting demonstrations on their part. We dared not dismount, and were in the saddle three hours, until the setting of the sun dispersed the Indians.

"On Monday morning we left camp to return to the Pelouse, marching in the following order: H company in advance, C in the centre, with the packs, and E in rear. At 8 o'clock the Indians appeared in great numbers about the rear of the column, and just as the advance was crossing a small stream they began firing. In twenty minutes the firing became continuous. Seeing that we must fight, and that the action must become general, I was ordered to move forward and occupy a hill that the Indians were making for, and upon which they would have a close fire upon the head of the column. After a close race I gained the hill in advance; on seeing which the Indians moved around and took possession of one commanding that which I occupied; leaving a few men to defend the first hill, and deploying my men, I charged the second and drove them off.

"At this time the action was general. The three companies, numbering in all about 110 men, were warmly engaged with 500 Indians. The companies were separated from each other nearly a thousand yards, and fought entirely by making short charges. At 11 o'clock I was reinforced by the howitzers, and the two companies began to move towards the position I held, the Indians pressing closely upon them. As E company was approaching, a large body of Indians got between it and my company, so that having it between two fires they could wipe it out at once. Gaston, seeing this, moved quickly towards me, having the Indians in his front, and when near enough, and I saw he was about to charge, I charged with the company. The result was that our companies met, having the Indians in a right angle, in which angle we left twelve dead Indians.

"After getting together, we kept up the fight for half an hour, and again started to reach water, moving half a mile under a constant and raking fire, under which our comrades Taylor and Gaston fell. We finally reached a hill near the water, and occupied a summit, and the Indians having now completely surrounded it, we dismounted and picketed our horses close together on the centre of the flat inclined summit, and posted our men around the crest, making them lie flat on the ground, as the Indians were so close and so daring as to attempt to charge the hill; but, although outnumbering us eight to one, they could not succeed.

"Towards evening our ammunition began to give out, and our men suffering so much from thirst and fatigue required all our attention to keep them up. To move from one point to another, we had to crawl on our hands and knees amid the howling of the Indians, the groans of the dying, and the whistling of balls and arrows. We were kept in this position until 8 o'clock p. m.; when, as night came on, it became apparent that on the morrow we must 'go under,' and that not one of us would escape. It was plain that, nearly destitute of ammunition, we were completely surrounded by six or eight hundred Indians, and the most of these on points which we must pass to get away. Therefore it was determined to run the gauntlet, so that if possible some might escape. Abandoning everything, we mounted and left the hill at 9 o'clock, and after a ride of ninety miles, mostly at a gallop, and without a rest, we reached Snake river at Red Wolf's

crossing the next evening, and were met by our friends the Nez Percés. We had two officers, five men, and three friendly Indians killed, and ten men wounded; Sergeant Ball of H company missing. The sergeant distinguished himself very much during the action, and we all hope he will yet come in.

"Captain Taylor was shot through the neck, and Lieutenant Gaston through the body; they both fell fighting gallantly. The companies fought bravely like true men. We brought our horses back in good condition, except about thirty, which were shot during the fight. The Indians made no captures. Before the battle was near over the Indians picked up nine of their dead; how many of them were killed is not known, but I can count fifteen; they acknowledge having forty wounded.

"It will take a thousand men to go into the Spokane country."

And the following from a friend at Vancouver to a friend in this city:

"VANCOUVER, WASHINGTON TERRITORY,
"May 27, 1858.

"DEAR SIR: From letters received here last night it is evident that Colonel Steptoe did not anticipate any hostility on the part of the *Spokanes*, and relied on their assistance in crossing the Spokane river. At the 'talk' with them on the 16th they refused to assist or even allow him to cross; and being without means or sufficient force to do so, in the face of such numbers, he was compelled to fall back. The severity of the fight on the 17th shows that his estimate of their strength and intentions was correct, and that to have attempted the passage under such circumstances would have insured the destruction of his entire command.

"Captain O. H. P. Taylor was a graduate of West Point of 1846, and brevet captain 'for his gallant and meritorious conduct in conflicts in New Mexico.' It is but a few weeks since he returned from the east with his wife and children, who are now widowed and orphaned by this sad affair. Lieutenant William Gaston was a graduate of 1856, and an officer of great promise.

"Very respectfully, yours, B."

Having arrived near the battle field, we came upon the bones of many of our men that had lain bleaching on the prairie hills for four months, and that had, in this interval, been scattered and dragged in every direction by the bands of wolves that had infested the place.

Having with us the Cœur d'Alene Indian who, after the battle, finding the body of Lieutenant Gaston, had himself covered it with leaves and bushes, and left it upon the field, we were directed to the spot of his rude burial, and there found the bones of that gallant officer, who fell bravely leading his men in a forlorn charge. On reaching the battle field proper we halted and encamped, and, picketing our animals in good grass, began to search for the remains of the

men there so inhumanly butchered, and the guns lost in that desperate encounter.

The guns, having been well buried, were found as they had been left, undisturbed. Passing along the slope of the hill, we came upon a small ravine, in which lay the graves of four men: Captain Taylor, a half-breed, and two of the dragoons. Silently and mournfully we disinterred their remains, and securely packing them bore them from the field to our camp, in order to transport them to Walla-Walla, there to give them proper burial with military honors.

Silently surveying the ground from the top of this hill, a scene of desolation and sadness met the eye at every point. Broken and burnt fragments of all that had once constituted the equipage of this command lay scattered to the right and left, and everywhere were to be seen the unmistakeable signs of a relentless savage who had determined on the utter annihilation of this small command.

But one thing remained not totally destroyed, viz: a pair of shafts of one of the buried guns. Why this had escaped the general conflagration of such things as the Indians could not usefully appropriate was a wonder to us all.

This, with our rude means at hand, we framed and fashioned into a cross, which we erected upon the battle field as a Christian token to the honored dead, and to point the stranger to the spot where brave men bravely met their fate; and as each officer and soldier lingered near the spot, and heard rehearsed the sad recital of that memorable defeat, the silent tear stole down many a bronzed cheek that had confronted death and braved danger upon many a tented field, and all praying in their hearts "*Requiescat in pace*," left behind them this hill of death, and moving to our camp we found everything quiet, as if the feelings of all were in sad unison with the place, and thus, too, our camp merits the name of the Camp of Death. The subjoined plans and sketches were made by Mr. Kolecki and Mr. Sohon, who accompanied the command.

Colonel Wright having presented us a bottle of fine brandy on the eve of starting for the battle field, we had occasion to remember our friends present and absent. Having accomplished the object of our mission, we resumed our march on the morning of the 25th over the same trail, reaching our former camp on the Ned-whauld at 12 m., where we learned the fate of Qual-chian and his confreres in crime.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS,
Camp on the Ned-whauld (*Lahtoo*) River, W. T.,
September 24, 1858.

SIR: At sunset last evening the Yakima chief Ow-hi presented himself before me. He came from the lower Spokane river, and told me that he had left his son, Qual-chian, at that place.

I had some dealings with this chief Ow-hi when I was on my Yakima campaign in 1856. He came to me when I was encamped on the Nah-chess river, and expressed great anxiety for peace, and promised to bring in all his people at the end of seven days. He did not keep his word but fled over the mountains. I pursued him, and he left that

country. I have never seen him from that time until last evening. In all this time he has been considered as semi-hostile, and no reliance could be placed on him.

This man Qual-chian, spoken of above, is the son of Ow-hi. His history for three years past is too well known to need recapitulation. He has been actively engaged in all the murders, robberies, and attacks upon the white people since 1855, both east and west of the Cascade mountains. He was with the party who attacked the miners on the We-nat-che river in June last, and was severely wounded; but recovering rapidly, he has since been committing assaults on our people whenever an opportunity offered. Under these circumstances, I was very desirous of getting Qual-chian in my power. I seized Ow-hi and put him in irons. I then sent a messenger for Qual-chian desiring his presence forthwith, with notice that if he did not come I would hang Ow-hi. Qual-chian came to me at 9 o'clock this morning, and at 9½ a. m. he was hung.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, commanding.

Major W. W. MACKALL, *Assistant Adjutant General,*

Headquarters Department of the Pacific, Fort Vancouver, W. T.

The Cœur d'Alenes and Spokanes having been now subdued, and the Pelouse having scattered and fled to the mountains, we had nought to do but to gather the small fragments of the Pelouse that live along the Snake river, and impose upon them such conditions as their crimes merited. We then determined to move southward, as we no longer had an enemy to fight. We resumed our march, then, early on the morning of the 26th, which was cloudy, cold, and uninviting. We have with us now twenty-one hostages and prisoners and a number of friendly Indians, the latter accompanying us for friendly purposes. Ascending the steep hill to the south of the Ned-whauld, we reached a broad, well beaten trail, following a generally southwesterly direction, and leading over the prairie hills for a distance of a mile and a half, when we reached the northern edge of a small skirt of pine timber, which was a continuation of the timber leading to Steptoe's battle ground. Leaving this, we continued over a generally rolling prairie country, affording us an excellent road, and at a distance of 15 miles struck the Sil-say-poo-west-tsin creek, which flows through a basaltic rocky cañon 300 yards wide, where occurs another belt of timber. At a distance of 12 miles from our camp we passed a broad prairie bottom, where were left standing the lodge poles of a large camp.

It was at this point that the main body of hostiles who attacked Steptoe were encamped, with their families. This point looks out to the south upon a continuous line of prairie hills; while to the west, and four or five miles distant, was to be seen another line of hills, partially wooded on the slopes, with a belt of dense timber intervening. While far to the north and west, in the distance, were seen high, frowning, pine clad mountains.

Those to the north we turned, when passing along the Spokane river, leaving them to our south, while those to the west were long spurs and ridges from the main Bitter Root or Cœur d'Alene mountains. The first portion of the road passes through a region well covered with bunch grass, which, to the latter end of the journey, gives place to a sparser growth, where the soil was composed of the detritus of the basaltic lava formation, at points in the interval passing small patches of bottoms, wet in early spring, where the Indians dig the cammass and other roots. We passed no water on the whole route, but in early spring water is found at the point above referred to, which is called by the Indians "See-lay."

This region is much frequented by Indians, in early spring, for roots of many kinds, and being well sheltered, with good grass, wood, and water, it affords them a good resting place.

Here is a small clump of cottonwood trees, in which are found small springs, with wild onions growing near them. Having travelled a distance of fifteen miles, we encamped in the pines on the left bank of the Sil-say-hoo-west-tsin, where we found good grass, wood, and water.

We were met on our road to-day by Schly-ot-se, a chief of a band of friendly Pelouse Indians, who, with two of his men, accompanied us to our camp.

Towards noon the sky became clear, which enabled us to get a good meridian altitude of the sun.

Resuming our march on the morning of the 27th at 7 o'clock, in a heavy rain storm, we crossed the Sil-say-hoo-west-tsin, and gaining its opposite bank, passed over a rocky, rough, pedrigal formation, through which we continued for a distance of three and a half miles, when we once more reached the open rolling prairie region. Throughout this distance we found the pine growing in clumps and scattered. The Sil-say-hoo-west-tsin, at a quarter of a mile from our camp, makes an oblong lake, the outlet of which at the south again forms, at no great distance, a second lake, the outlet of which empties into the Nyos-somen creek. This lake lies in a deep, rocky bed, with vertical basaltic walls, and lined on either side with scattering pine trees.

This pedrigal formation extended some distance to the south and southwest, and may extend northward as far as the general pedrigal formation referred to in our journal of the 4th of September.

Gaining the rolling prairie, the trail became broad and well beaten, passing along the easy slopes of prairie ridges, over which it continued for seven miles, when we again came in view and passed through another strip or skirt of timber, through which flows a small, cold stream, shaded immediately on its borders by fringes of willow. This stream the Spokanes call the Scho-scho-u-seep, and the Pelouse the Acqua-aye-seep. It flows to the south and joins the waters of the Pelouse.

The total distance travelled to-day was eleven and a quarter miles, when we encamped on the left bank of the Scho-scho-u-seep, finding good wood and water, but not an abundance of grass. But as we to-day, for the first time on our return route, came in view of the burnt prairie, we feared meeting with some difficulty in finding sufficient

grass ahead for camping purposes, and rather than risk so much, we determined to halt and encamp here, and especially when the clouds that had been lowering throughout the day now began to let fall a drenching rain.

Our view of the surrounding country to-day was much interfered with by the dark hazy character of the atmosphere, but as far as seen to the south and west, it continued a high rolling prairie with unburnt grass, while to the north the country became lower and easier.

The soil in many places to-day was fertile, and with springs earlier in the season, along the trail, would afford excellent camping grounds. But now we found a general scarcity of water. The day being cool, the men did not suffer from thirst, but reached camp with full and untouched canteens.

While on the road to-day we were overtaken by an express man from Fort Colville, bearing us the intelligence that the Indians in that vicinity were committing acts of depredation, and calling upon Colonel Wright for aid and protection. A letter from Father Ravalli to me set forth a fear of a general outbreak of the Indians among the miners and settlers of the valley, and represents an unpromising state of things among the people of that region.

Now that there is a great travel from Fort Colville to the northern mines on Thompson's and Frazer rivers, the Indians doubtless will annoy the line of emigrants destined to pour into that region by this route. But would it not appear a little strange that a foreign corporation, such as the Hudson's Bay Company now is, in our midst, near the border of the territory of its own government, should call upon us for protection against Indians, many of whom come from British territory for the purposes of aggression and plunder?

This foreign corporate body, be it said, however, with all respect for its many high-toned, generous, and chivalric bourgeois and chief factors, exists in our midst as an incubus upon our American progress and advancement; that dries up the fountains of prosperity wheresoever located; whose original entry and present stay in the country has been for lucre's sake; I say would it not seem strange, that as these things should so glaringly exist, that we should be still further mortified by being called upon for a military protection.

Were they our own citizens, did we feel that their residence in our midst was to our present or future advancement, then we might unquestionably act differently; for then it would not only be our duty, but this duty would be cheerfully and willingly performed. As pioneers in western settlement and civilization they would be entitled to and would receive our special protection.

This state of things commends itself to the early and earnest attention of our government, for that adjustment and solution that will go to define the rights of our own citizens, and that will not put in jeopardy the lives or interests of a foreign body, regarding whose privileges so much has been guaranteed by treaty stipulations.

The morning of September 28 was cloudy and hazy, and the heavy rain of the previous night still continuing gave promise of an uncomfortable day's journey. But we, nevertheless, resumed our march

at 7 a. m., passing over an easily rolling prairie country for one and a half miles, when we entered a narrow *crulée*, with hills some 200 feet high bounding it on either side. We passed through this for a mile, when we again ascended to the open prairie, passing a small lake not far from the trail. The pine skirting this lake, and in a narrow strip, continued some distance below. The country to the east of this line was a swelling prairie. The Nyossomen creek empties into the lake referred to, the outlet of which now continued to flow through a bleak, barren, basaltic formation, which we could trace for many miles, but still limited towards the east and south and west by this line of prairie hills. At twelve miles distant from camp this stream makes a second lake, then, bending to the south, flows through a changing country, giving place to a low prairie basin, the stream here being fringed with willows. As the soil is light and spongy it is difficult to approach the lake with horses, as it becomes miry towards its border. This rocky basin, through which it soon flows, became more narrow and more rocky. The outlet of this lake soon again becomes a small thread of water, which almost loses itself or sinks into the ground.

We crossed it at a point where its bed is formed of rounded, water-worn boulders, which here presented the appearance of being a stream of considerable size during the spring season. At this point were signs of fish-stands, and the rocks arranged along the bottom similar to those formed for catching salmon in the streams below, of much larger size and of more marked character.

Crossing at this point, we ascended the hill to the south of the creek, in order to avoid the strong bend it made in passing to the west, where it winds through a deep, rocky, black basaltic cañon. On gaining the summits of these hills we have a fine panoramic view of the country that now broke upon the view to our front and right. To the west lay three parallel ranges of high prairie or table land, the nearest two being now burnt over, while the more distant, notwithstanding the cloudy day and generally dreary aspect of the country around, looked not unlike a golden belt that skirted the horizon. Between this and the middle range passed our trail while travelling northward. To our south lay other ranges of flat prairie or table land, marking distinctly the general direction of the Pelouse as it flowed to the west.

Our road now passed over a generally low prairie road for seven or eight miles, when we struck the Oray-tay-ouse, which here flows through a deep rocky cañon a quarter of a mile wide, with strips of prairie land in the bottom.

On gaining the valley bottom of this creek our trail turned a sharp point of basaltic rock. At this place are several Indian graves; among them that of the son of Schlot-ze, the Pelouse chief, who had been now our travelling companion for three days.

Travelling a mile along the Oray-tay-ouse, we encamped on its right bank at the crossing, finding good grass and water and sufficient fuel for our purposes. The stream is here fringed with large willow, much of which is dry, and a few scattered cottonwoods. We had

to-day a distinct view of the Se-empt-tee-ta butte, which, rearing its blue peak far above the prairie hills around make it the prominent landmark of the country. We left behind us to-day the last of the pines, regarding which I would remark, that they make their first appearance near the highest points of the plateau and extend northward, and have been to us always the means of pointing out the presence of water. The higher points of this plateau being so situated as to intercept whatsoever moisture passes over the country, not deposited upon the mountains in the west, are found covered to a greater or less extent with strips and belts of pine. But what would seem a somewhat singular coincidence is, that wherever in this region we have found the pine growing, the soil has been more or less rocky, and often, indeed, a perfect pedregal formation, apparently with so small a quantity of soil between the rocks as to afford but small hold for the trees to grow.

But in many cases the trees grow luxuriantly and to enormous sizes. The pine is the long-leaved yellow pine, with a slight reddish bark.

The Oray-tay-ouse of the Spokanes is the Wai-rum of the Pelouse; and I would here remark that in travelling in this region much confusion often arises in giving names to streams and localities in terms of the language only spoken by the guides of exploring or surveying parties; and as an instance of this we will take the stream marked on our maps and known among us as the Pelouse. This stream is not so called by any tribe or band of Indians in the country. By the Pelouse Indians the Snake river as it flows through their country is called the Pelouse; as it flows through the Nez Percés country it is called the Nez Percé river, and as it flows through the Snake Indian country it is called the "Snake river." Thus we see one and the same stream called by three separate and distinct names according to the ownership of the country through which it flows. So also the butte, called by Governor Stevens in his maps and in his reports the "Pyramid butte," is by the Spokanes and Cœur d'Alenes called the Se-empt-tee-ta, and by the Pelouses and Nez Percés the E-o-mosh-toss butte. So the stream upon which we had encamped the 28th September is called by the Spokanes O-ray-tay-ouse, and by the Pelouses Wah-rum; but higher up, before it has formed a series of lakes and received tributaries from the east and other points, it bears still other and different names, and hence the great liability to confusion and error in recording the names to streams and localities unless the most rigid and careful attention be given by each explorer. The similarity between the languages of the Nez Percés and Pelouses is such that the names given to places in the one language might be nearly one and the same as they would bear if given in the other.

With a desire to retain as far as possible each and every Indian name, and to avoid this constant confusion of names that has so often misled us in following the itineraries of others, a rule we have adopted has been to give the Indian names, sometimes more than one, in that language spoken by the tribe in or near whose country the place or locality exists; and as the language will exist unchanged as long as the tribe exists, future travellers in retracing our steps will,

being provided with itineraries of our routes, be enabled to mark with certainty our positions and thus correct many errors which doubtless we have made.

And if this were more generally followed less liability to error and confusion would occur and much positive and correct information gained.

We passed during the march of 28th September many patches of rich, excellent soil, and water at convenient distances for camping or for marching purposes. The great desideratum here is and must be for some time, until a new order of things be had, an abundant supply of fuel.

Leaving our camp on the O-ray-tay-ouse at an early hour on the 29th September, we followed down its right bank for one and a half miles to its junction with the Pelouse, which here flows from the east through a rocky basaltic cañon, one-eighth of a mile wide with walls 150 feet high, stream fringed with willow and flowing over a rocky bed.

The valley of the Pelouse widened as we descended it, the rocky walls giving place to well-grassed prairie hills well covered with soil. The stream itself became somewhat tortuous, winding from side to side, compelling us to avoid its many crossings by taking to the side hills, which in many places were quite rocky. A good wagon road would mostly follow the trail except at a few of the steeper places where it must go in the bottom, crossing and recrossing the stream. The general appearance of the bed of the Pelouse is such as to show that in the spring season a large volume of water is sent down by it to the Snake river, and which, so far as our information now extends, its only tributary west of the Clearwater from the north.

The character of the country through which the Pelouse flows is such, that though at or near its mouth the volume of water reduces down to a mere thread, still as you ascend it the volume is increased and becomes deeper.

So also at or near the Pyramid butte, the valley of the stream, which from its mouth to this point is almost a cañon, here opens out into a broad, well-grassed, fertile valley, with thick forests of pine at many points. A full description of the country along the Pelouse to the east of the Pyramid butte may be found in the last published report of Governor Stevens, whose labors have made this whole region so well and so favorably known. The verbal conversations held with Colonel Steptoe, who passed over the upper part of the Pelouse, all go to confirm the views entertained by Governor Stevens regarding it, and so favorably impressed me that I sent a party of friendly Indians over the route to the Bitter Root valley, who report to me an easy wagon road up the valley of the Pelouse. It merits, and may yet receive, a more minute and careful examination, for if found as reported, it is the most direct location for the proposed military road from Fort Benton to Fort Walla-Walla.

The lower portion of the Pelouse is not timbered save with the willow, a few scattering cottonwood trees, and an occasional lost pine.

The stream overflows its banks, as shown by the many deep cuts through its valley bottom. Travelling eighteen miles we encamped

on the Pelouse about eight miles above our camp of the 27th August, finding good grass, wood and water. Here we met a large delegation of the Pelouse, with whom the colonel had a talk; and having hung a few of the ringleaders in the late difficulties, and taking a number of hostages, he allowed the remainder to return to their people.

It was supposed, at one time, that we should have remained here some days to await intelligence from General Clark, who, it was thought, contemplated a winter campaign; but as the *objects* of the expedition had been *all* attained, the colonel, on the 30th of September, moved one half of his command, under Captain Keyes, to our old camp at Fort Taylor, and on the 1st of October with the remainder crossed Snake river himself in perfect safety and rendezvoused at Walla-Walla, our command being there inspected by Colonel Mansfield, Inspector General United States army, on the 5th October, 1858.

It will be observed that throughout our whole march little or no mention is made of game in this region. We saw, I think, but one bear, which, with the large numbers of prairie chickens and sage hens, constituted our only game. Elk, bear, and deer, however, are found in large numbers in and near the foot-slopes of the mountains and in the Cœur d'Alene country, especially large numbers of black bear are found and which are successfully hunted by the Indians. Why game should be so scarce in this region does not exactly appear, unless it has been entirely destroyed, for grass and water are found in sufficient abundance to subsist countless herds of game.

We found most excellent trout in all the streams, as well as a variety of other fish peculiar to the mountain region. The salmon is found in the Spokane and its tributaries as far as the foot-slopes of the mountains, in the Cœur d'Alene and St. Joseph rivers, and the Cœur d'Alene lake.

During the higher stages of water they have little or no difficulty in passing over the upper and lower Spokane falls.

Up the Pelouse they cannot ascend beyond the falls, which are so high as to preclude all possibility of their passing; and on the Snake river I doubt if it is exactly known up to what point they ascend, unless it be at the "Great Shoshonee falls," not far from Fort Hall.

Many of the Indians inhabiting the great plain of the Columbia make almost annual hunting excursions across the mountains, to the plains of the Missouri and Yellowstone. Starting generally in June or July, when the streams are mostly fordable, they return before the first fall of snow, and even at times remain until the following spring, hunting in the mountains.

Thus it can be readily seen that, with the fish of the streams, their bands of horned stock and the increase of their countless herds of horses render them, if not wealthy, certainly independent of governmental aid and governmental assistance, so far as their immediate wants are concerned.

But the government in its wisdom and prudence should make some timely provision for these many Indians, by selecting for and placing them upon proper reservations, in order that they may not be caused to disappear by the fast-approaching waves of civilization and settlement that must otherwise overtake and eventually destroy them.

A complete series of meteorological observations were made from day to day with great care by Mr. Sohon over the whole line, from Fort Dalles to the Cœur d'Alene Mission and back; but no profile deduced from these observations is here appended: first, because it was not thought necessary; and, again, for the want of ample time to work up the observations.

They will go, however, to swell the data contemplated to be collected on the proposed line of the military road from Fort Walla-Walla to Fort Benton at a future day.

With regard to the meteorology of the country during the campaign, it might be well to remark that the number of rainy days was about one-fifth of the whole. We were delayed for two days, the 23d and 24th August, by heavy rain storms; and, as the narrative of the trip shows, we were often inconvenienced in travelling by heavy rains in July, August, and September. The prairie hills, which were burnt over in August, were covered with the young green grass putting forth beautifully by the last of September.

The weather was generally mild and pleasant, except a few nights in the Cœur d'Alene mountains, but even then not uncomfortable.

The table of latitudes, longitudes, and variations of the compass, which is appended to this report, were determined by Mr. Kolecki, Mr. Sohon, and myself, with as great accuracy as our instruments and means at hand allowed. Our sextant was one of Gambey's best, purchased of Blunt & Sons, New York, and which during the whole campaign worked in admirable adjustment. The latitudes were deduced principally from the meridian altitudes of the sun; at other times from Polaris, or north and south stars near the meridian. Our longitudes were chronometric; our chronometers being one pocket and two box, and two pocket watches. Our present chronometer was one received from the Topographical Bureau, which proved worthless, as did also the box chronometer, received from Lieutenant Wheeler. Our main reliance was upon a box chronometer hired from Mr. Tennent, and our pocket watches. This box chronometer was carried by hand from day to day with great care, enveloped in a leather case with stuffed cushions, over it again in a second case of sail cloth, made by Mr. Kolecki, who devoted himself zealously and assiduously to its care and the making of observations. Assuming our longitude of old Fort Walla-Walla, as that given by Captain Wilkes, of the United States navy, and for the reasons set forth hereafter, and platting our odometer survey back to Fort Dalles, we find that our longitude of that place falls between that given it by Colonel Frémont and that of Lieutenant Abbott. And, therefore, on our map we have given the longitude of Fort Dalles $120^{\circ} 57' 48''$ W., and latitude $45^{\circ} 35' 48''$ N.; and longitude of Fort Walla-Walla—the present new fort— $118^{\circ} 12' 36''$ W.. and latitude $46^{\circ} 03' 18''$ N.

Lieutenant Abbott enjoyed superior advantages to either Colonel Frémont or ourselves, from the number of his chronometers, &c., and, therefore, his results are justly entitled to greater credit; but I still regard the question as to the position of Fort Dalles and Fort Cascades and Fort Vancouver as still open, and that merit a special set of observations, made with great care and under special advan-

tages, that will go to settle definitely the doubt that now exists regarding them, and that will enable future lines to take any one of them as fixed initial points.

In future explorations and surveys, therefore, in this quarter, special attention, with credit to the surveyor or explorer and advantage to the department, might be given to this subject.

We have assumed Wilkes' longitude as the basis for our work, and for the reason that his means and time for deducing it were, perhaps, better than our own. Our latitude differs from Wilkes' by $1' 12''$. The following letter from Captain Wilkes to Lieutenant Warren, of the army, who, when compiling a map of that region, addressed him a letter asking for the observation upon which these results were based, speaks for itself and shows what reliance may therefore be placed in them. Observations were made at old Fort Walla-Walla by the parties of Captain Wilkes in 1841, and again by Colonel Frémont in 1843, after his trip across the continent. But the advantages enjoyed by Captain Wilkes must have been so far superior to those of Frémont that, with all due respect to those of the latter, I think justice to a survey and to correctness dictate the adopting the results of Wilkes. The following letter, copied with the permission and kindness of Lieutenant Warren, shows what reliance Captain Wilkes placed upon the work of Lieutenant Johnston of the navy, who made the observations :

" WASHINGTON CITY, D. C., *June 5, 1854.*

" DEAR SIR : Your letter of the 29th should have been answered sooner if I could have found the observations by which the position of Walla-Walla was determined.

" The position assigned it is latitude $46^{\circ} 02' 48''$ N., longitude $118^{\circ} 47' 45''$ W. The result of three days' observations deduced from chronometers, and these were made by Lieutenant Johnston, of the expedition, who had charge of the party, and even calculated my own observations of the rates. The position was also determined by bearings or angles on the three mountain peaks, which gave a very good result.

" I have always felt great confidence in these results. I gave them at the time a very careful examination, and think Lieutenant Johnston made them under favorable circumstances. Mr. Drayton, who also visited Walla-Walla in the survey of the river up to that point, agrees in his determination with Lieutenant Johnston at this point. Their observations were intended to serve as checks upon each other.

" I am, very respectfully, your obedient servant,

" CHARLES WILKES, *U. S. Navy.*

" LIEUT. G. K. WARREN,

" *Topographical Engineers, Washington, D. C.*

" True copy :

" JOHN MULLAN,

" *First Lieutenant, 2d Artillery, U. S. A.*"

A table of distances by odometer measurement is also appended to the report, which may be useful either for reference or for the future traveller. The report might have been much fuller had it been thought necessary; but I believe the character of the line of march and the country through which we were called upon to operate will be made sufficiently known by what has been said.

The expedition, which was planned, organized, and moved into the field against the hostile northern Indians by the prompt and wise plans of General Clark, assisted by his efficient staff, for the punishment of the Spokanes, Pelouses, and Cœur d'Alenes, was thus ended on the first day of October, 1858; and that it *was ended*, in the opinion of the officer commanding the campaign and with what results, his following official letter, on file in the War Department, sufficiently shows, and I therefore append it. I can only close my report by again returning my thanks to my assistants, Mr. Kolečki and Mr. Sohon, to whose zealous and untiring labors I am mainly indebted for anything of value that my report may contain.

To Captain Kirkham, assistant quartermaster, who was always ready and willing to co-operate with me, and to such officers and men, civil and enlisted, who, from time to time, throughout the campaign lent me their cordial assistance and co-operation, I would here return my sincere thanks.

I am, sir, most respectfully, your obedient servant,

JOHN MULLAN,

First Lieut. 2d Artillery, Acting Top. Eng.

HEADQUARTERS EXPEDITION AGAINST NORTHERN INDIANS, *Camp on the Pelouse River, W. T., September 30, 1858.*

SIR: The war is closed. Peace is restored with the Spokanes, Cœur d'Alenes and Pelouses. After a vigorous campaign the Indians have been entirely subdued, and were most happy to accept such terms of peace as I might dictate.

Results.

1. Two battles fought by the troops under my command, against the combined forces of the Spokanes, Cœur d'Alenes, and Pelouses, in both of which the Indians were signally defeated, with a severe loss of chiefs and warriors, either killed or wounded.

2. The capture of one thousand horses and a large number of cattle from the hostile Indians, all of which were either killed or appropriated to the service of the United States.

3. Many barns filled with wheat or oats, also several fields of grain, with numerous *caches* of vegetables, dried berries, and *kamas*, all destroyed or used by the troops.

4. The Yakima chief, Ow-hi, in irons, and the notorious war chief Qual-chian, hung. The murderers of the miners, the cattle stealers, &c., (in all eleven Indians) all hung.

5. The Spokanes. Cœur d'Alenes and Pelouses entirely subdued, and sue most abjectly for peace on any terms.

6. Treaties made with the above named nations; they have restored all property which was in their possession, belonging either to the United States or to individuals; they have promised that all white people shall travel through their country unmolested, and that no hostile Indians shall be allowed to pass through or remain among them.

7. The delivery to the officer in command of the United States troops of the Indians who commenced the battle with Lieutenant Colonel Steptoe contrary to the orders of their chiefs.

8. The delivery to the officer in command of the United States troops of *one* chief and *four* men, with their *families*, from each of the above named tribes, to be taken to Fort Walla-Walla, and held as hostages for the future good conduct of their respective nations.

9. The recovery of the two mountain howitzers abandoned by the troops under Lieutenant Colonel Steptoe.

Very respectfully, your obedient servant,

G. WRIGHT,

Colonel 9th Infantry, Commanding.

Major W. W. MACKALL,

Assistant Adjutant General,

Headquarters Department of the Pacific, Fort Vancouver, W. T.

Table of distances on the line of march followed by the military expedition against the northern Indians under Colonel G. Wright, from July 16 until October 16, 1858.

FROM FORT DALLIES TO SNAKE RIVER, (MOUTH OF TUKANON AND FORT TAYLOR,) BY THE ROUTE OF THE WAGON ROAD.

	Junction 5 and 10 miles creek.	Des Chutes river.	Mud springs.	John Day's river.	Black Creek camp.	Willow creek.	Butler creek.	Fort Henrietta.	Up. camp on Umatilla, (McCoy's agency.)	Wild Horse creek.	New Fort Walla-Walla.	Dry creek.	Touchet river.	Head of Reed creek.	Tukanon.	Snake river, mouth of Tukanon.
Port Dalles	Miles. 6.0	Miles. 16.0	Miles. 37.3	Miles. 47.3	Miles. 54.5	Miles. 74.5	Miles. 104.5	Miles. 113.6	Miles. 134.3	Miles. 134.0	Miles. 172.7	Miles. 182.8	Miles. 185.8	Miles. 203.5	Miles. 214.7	Miles. 217.7
Junction 5 and 10 mile creeks
Des Chutes river
Mud Springs
John Day's river
Black Creek camp
Willow creek
Butler creek
Fort Henrietta, (crossing of Umatilla)
McCoy's agency, (upper camp on Umatilla).
Wild Horse creek
New Fort Walla-Walla
Dry creek
Touchet river
Head of Reed creek
Tukanon

Table of distances—Continued.

FROM MOUTH OF TUKANON TO CŒUR D'ALÈNE MISSION VIA THE CŒUR D'ALÈNE PRAIRIE, &C.

	Pelouse river.	Cow Creek camp.	Aspen camp.	Pedrigal camp.	Camp at four lakes.	1st camp, Spokane river.	2d camp, Spokane river.	3d camp, Spokane river.	Cœur d'Alène lake.	Wolf's Lodge creek.	Cœur d'Alène Mission.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Snake river and Tukafon	13.8	20.1	40.1	58.1	77.6	97.8	103.8	118.3	133.8	145.8	161.8
Pelouse river		6.3	26.3	44.3	63.8	84.0	90.0	104.5	120.0	139.0	148.0
Cow Creek camp			20.0	38.0	57.5	77.7	83.7	98.9	103.7	115.7	131.7
Aspen camp				18.0	37.5	57.7	63.7	78.9	93.7	105.7	121.7
Pedrigal camp					19.5	39.7	45.7	60.9	75.7	87.7	103.7
Camp at the four lakes						20.9	26.9	40.7	56.9	68.9	84.9
1st camp on Spokane river, below Lahioo creek							6.0	20.5	36.0	48.0	64.0
2d camp on Spokane river, above the Great Falls								14.5	30.0	42.0	58.0
3d camp on Spokane river, (Best ford)									15.5	27.5	43.5
Cœur d'Alène lake										26.0	92.0
Wolf's Lodge creek											16.0

FROM CŒUR D'ALÈNE MISSION TO MOUTH OF TUKANON VIA THE GUTS OF THE LAKE AND NED-WHAULD CREEK.

	Cœur d'Alène river.	St. Joseph's river.	Camp at spring.	Lahioo creek.	Tell-sei-pow-vetain.	Tcho-cho-u-seep.	Oray-tay-ouse.	Pelouse river.	Mouth of Tukafon, (Fort Taylor.)
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Cœur d'Alène Mission	15.0	26.0	34.0	55.0	70.0	81.9	107.7	122.7	140.7
Cœur d'Alène River crossing		13.0	19.0	40.0	55.0	66.9	92.7	107.7	125.7
St. Joseph's River crossing			6.0	27.0	42.0	53.9	79.7	94.7	112.7
Camp at spring				21.0	36.0	47.9	73.7	88.7	106.7
Lahioo (Nedwhauld or Camasse prairie) creek					15.0	26.9	52.7	67.7	85.7
Tell-sei-pow-vetain creek and lake						11.9	37.7	52.7	70.7
Tcho-cho-u-seep Creek fork							26.5	41.5	58.5
Oray-tay-ouse or In-cho-a-sep Creek crossing								15.0	33.0
Camp on Pelouse river									18.0
Mouth of Tukafon, (Fort Taylor)									0.0

	Miles.
From New Fort Walla-Walla to Old Fort Walla-Walla	29.4
From mouth of Des Chutes river to Old Fort Walla-Walla by Columbia river, (estimated)	119.0
From mouth of Tukafon to Old Fort Walla-Walla by Snake river and Columbia ..do	69.9
From mouth of Tukafon to New Fort Walla-Walla by the lower land route	50.3

RECAPITULATION.

	Miles.
Fort Dalles to mouth of Tukafon, Snake river	217.7
Snake river to Cœur d'Alène Mission	161.8
Cœur d'Alène Mission to Snake river	140.7
Snake river to New Fort Walla-Walla	50.3
New Fort Walla-Walla to Fort Dalles	168.0
Total distance	738.5

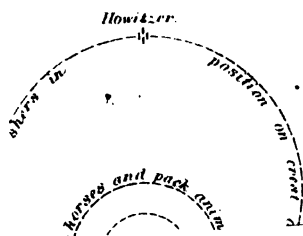
Table of latitudes, longitudes, and variations of the compass determined on the line of march of the expedition under Colonel George Wright against hostile northern Indians in Oregon and Washington Territories, and prepared under the general direction of Captain A. A. Humphreys, in charge of Bureau of Explorations and Surveys, War Department, by Lieutenant John Mullan, 2d artillery, and Theodore Koeckel, civil engineer, &c., and topographer to the expedition.

Date.	Place of observation.	Latitude. ° ' "	Longitude. ° ' "	Variation.	Remarks.
1858. May 15	Fort Dalles, Oregon.....	45 35 48 N.	120 57 48 W.	19 30 E.	Deduced from the position of Old Fort Walla-Walla by odometer survey.
25	Dalles City, Oregon.....	45 36 04	-----	-----	-----
July 20	Camp on Rock creek, six miles above its mouth.....	45 33 41	-----	-----	-----
23	Crossing of Umatilla.....	45 41 25	-----	20 00	-----
24	McCoy's agency on Umatilla.....	45 40 00	-----	-----	-----
25	Camp on Wild Horse creek, at bend.....	45 48 16	111 19 42	21 00	-----
28	Old Fort Walla-Walla, centre of fort.....	46 03 58	118 47 45	-----	Determined by Captain Wilkes, United States navy, and adopted as a standard longitude.
Aug. 1	Camp near New Fort Walla-Walla.....	46 03 55	118 12 01	21 30	-----
7	New Fort Walla-Walla.....	46 03 18	118 12 36	-----	-----
12	Fort Taylor, junction of Snake and Tonkannon rivers.....	46 33 04	118 01 40	22 00	-----
27	Camp on Pelouse river.....	46 45 10	118 00 39	22 00	-----
28	Camp on Cow creek.....	46 50 01	117 58 42	-----	-----
29	Camp Aspen.....	47 05 15	117 51 48	-----	-----
30	Pedrigal camp.....	47 17 48	117 43 48	-----	-----
31	Camp at "Four Lakes".....	47 32 09	117 32 06	-----	-----
Sept. 6	First camp on Spokane river.....	47 40 35	117 19 22	-----	-----
10	Third camp on Spokane river.....	47 41 04	116 57 42	-----	-----
14	Cœur d'Alene mission at the church.....	47 32 54	116 13 45	22 00	-----
Aug. 19	Camp on Cœur d'Alene river.....	47 28 32	116 29 48	-----	-----
20	Camp on St. Joseph's river, at the "Guts" of the lake.....	47 23 12	116 36 12	(?)	-----
23	Camp at Nedwauld creek.....	47 23 56	117 07 19	-----	-----
30	Camp on Pelouse.....	46 46 12	117 54 00	-----	-----
25	Steptoe's battle field.....	47 14 24	117 11 53	22 00	-----

Respectfully submitted.

JOHN MULLAN 1st Lieut. 2d Artillery. Acting Top. Eng'r.

tion of Col. Steptoe, night of
17th, previous to final retreat



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...the danger shall have
away. without such a provision our citizens will be constantly
led to interruption in their progress, and to lawless violence.

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MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

RELATIVE TO

The importance of legislation for the protection of American citizens and property while in transit across the Isthmus between the Atlantic and Pacific oceans.

FEBRUARY 18, 1859. — Read, and ordered to be printed. On motion by Mr. MASON that it be referred to the Committee on Foreign Relations, after debate, the Senate adjourned.

To the Senate and House of Representatives:

The brief period which remains of your present session, and the great urgency and importance of legislative action, before its termination, for the protection of American citizens and their property whilst in transit across the Isthmus routes between our Atlantic and Pacific possessions, render it my duty again to recall this subject to your notice. I have heretofore presented it in my annual messages, both of December, 1857 and 1858, to which I beg leave to refer. In the latter I state that "the executive government of this country, in its intercourse with foreign nations, is limited to the employment of diplomacy alone. When this fails it can proceed no further. It cannot legitimately resort to force without the direct authority of Congress, except in resisting and repelling hostile attacks. It would have no authority to enter the territories of Nicaragua, even to prevent the destruction of the transit and protect the lives and property of our own citizens on their passage. It is true that on a sudden emergency of this character the President would direct any armed force in the vicinity to march to their relief, but in doing this he would act upon his own responsibility.

"Under these circumstances, I earnestly recommend to Congress the passage of an act authorizing the President, under such restrictions as they may deem proper, to employ the land and naval forces of the United States in preventing the transit from being obstructed or closed by lawless violence, and in protecting the lives and property of American citizens travelling thereupon, requiring at the same time that these forces shall be withdrawn the moment the danger shall have passed away. Without such a provision our citizens will be constantly exposed to interruption in their progress, and to lawless violence.

"A similar necessity exists for the passage of such an act for the protection of the Panama and Tehuantepec routes."

Another subject, equally important, commanded the attention of the Senate at the last session of Congress.

The republics south of the United States on this continent have, unfortunately, been frequently in a state of revolution and civil war ever since they achieved their independence. As one or the other party has prevailed and obtained possession of the ports open to foreign commerce, they have seized and confiscated American vessels and their cargoes in an arbitrary and lawless manner, and exacted money from American citizens by forced loans, and other violent proceedings, to enable them to carry on hostilities. The executive governments of Great Britain, France, and other countries, possessing the war-making power, can promptly employ the necessary means to enforce immediate redress for similar outrages upon their subjects. Not so the executive government of the United States. If the President orders a vessel-of-war to any of these ports to demand prompt redress for outrages committed, the offending parties are well aware that in case of refusal the commander can do no more than remonstrate. He can resort to no hostile act. The question must then be referred to diplomacy, and in many cases adequate redress can never be obtained. Thus American citizens are deprived of the same protection, under the flag of their country, which the subjects of other nations enjoy. The remedy for this state of things can only be supplied by Congress, since the Constitution has confided to that body alone the power to make war. Without the authority of Congress, the Executive cannot lawfully direct any force, however near it may be to the scene of difficulty, to enter the territory of Mexico, Nicaragua, or New Granada, for the purpose of defending the persons and property of American citizens, even though they may be violently assailed whilst passing in peaceful transit over the Tehuantepec, Nicaragua, or Panama routes. He cannot, without transcending his constitutional power, direct a gun to be fired into a port, or land a seaman or marine to protect the lives of our countrymen on shore, or to obtain redress for a recent outrage on their property. The banditti which infest our neighboring republic of Mexico, always claiming to belong to one or other of the hostile parties, might make a sudden descent on Vera Cruz or on the Tehuantepec route, and he would have no power to employ the force on ship-board in the vicinity for their relief, either to prevent the plunder of our merchants or the destruction of the transit.

In reference to countries where the local authorities are strong enough to enforce the laws the difficulty here indicated can seldom happen; but where this is not the case, and the local authorities do not possess the physical power, even if they possess the will, to protect our citizens within their limits, recent experience has shown that the American Executive should itself be authorized to render this protection. Such a grant of authority, thus limited in its extent, could in no just sense be regarded as a transfer of the war-making power to the Executive, but only as an appropriate exercise of that power by the body to whom it exclusively belongs. The riot at Panama in

1856, in which a great number of our citizens lost their lives, furnishes a pointed illustration of the necessity which may arise for the exertion of this authority.

I therefore earnestly recommend to Congress, on whom the responsibility exclusively rests, to pass a law before their adjournment conferring on the President the power to protect the lives and property of American citizens in the cases which I have indicated, under such restrictions and conditions as they may deem advisable. The knowledge that such a law exists would of itself go far to prevent the outrages which it is intended to redress, and to render the employment of force unnecessary.

Without this the President may be placed in a painful position before the meeting of the next Congress. In the present disturbed condition of Mexico, and one or more of the other republics south of us, no person can foresee what occurrences may take place before that period. In case of emergency, our citizens, seeing that they do not enjoy the same protection with subjects of European governments, will have just cause to complain. On the other hand, should the Executive interpose, and especially should the result prove disastrous, and valuable lives be lost, he might subject himself to severe censure for having assumed a power not confided to him by the Constitution. It is to guard against this contingency that I now appeal to Congress.

Having thus recommended to Congress a measure which I deem necessary and expedient for the interest and honor of the country, I leave the whole subject to their wisdom and discretion.

JAMES BUCHANAN.

WASHINGTON, *February* 18, 1859.

REPORT
OF
THE SECRETARY OF STATE,

COMMUNICATING,

In obedience to law, statements showing the number and designation of passengers arriving in the United States during the year 1858.

FEBRUARY 16, 1859.—Read. Motion to print, referred to the Committee on Printing..

FEBRUARY 19, 1859.—Report in favor of printing; considered and agreed to.

DEPARTMENT OF STATE,
Washington, February 15, 1859.

SIR: In compliance with the act of Congress of March 3, 1855, regulating the carriage of passengers in steamships and other vessels, I have the honor to communicate herewith statements of the *number, sex, age, and occupation* of passengers arriving in the United States by sea from foreign countries during the year ending December 31, 1858, together with the *country in which they were born, the country in which they mean to reside, and the number that died on the voyage*, compiled from returns made to this department by collectors of the customs, pursuant to the provisions of said act.

I have the honor to submit also, herewith, comparative statements showing:

1. The countries in which were born passengers arriving in the United States from foreign countries during each of the last four years;
2. The occupation of passengers arriving in the United States from foreign countries during each of the last four years;
3. The age of passengers arriving in the United States from foreign countries during each of the last four years; and
4. The number of passengers arriving in the United States from foreign countries, from September 30, 1843, to December 31, 1858.

I have the honor to be, sir, your obedient servant,

LEWIS CASS.

Hon. JOHN C. BRECKINRIDGE,
President of the Senate.

PASSENGERS ARRIVING

Statement of the number and designation of passengers arriving

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
Portland—Moses MacDonald, collector.															
Quarter ending March 31.	Clergymen....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics....	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants....	139	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painter....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printers....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturer....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemaker....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mason....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailor....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others....	43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	70	134	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		379	137	9	5	9	9	10	6	17	9	44	27	25	23
Quarter ending June 30..	Mechanics....	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariner....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	9	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		41	21	4	2	...	1	3	2	9	4	10	4	5	4
Quarter ending Sept. 30.	Clerk.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchant....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		20	7	.....	.....	.....	.....	1	1	2	.....	7	3	5	2
Quarter ending Dec. 31..	Artist.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanic....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	18	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		57	33	3	7	1	5	.....	2	5	1	12	13	12	4

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 50 years.	Females from 35 and under 50 years.
<i>Pennamquoddy—Robert Burns, collector.</i>															
Quarter ending March 31.	Merchants ..	91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		97	9	.....	.....	.....	.....	1	.....	1	1	.....	1	2	2
Quarter ending June 30..	Laborers	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	9	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		130	30	.....	.....	.....	.....	1	.....	3	1	8	4	42	6
Quarter ending Sept. 30.	Laborers	134	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		134	50	.....	.....	.....	.....	2	4	10	6	24	7	33	9
Quarter ending Dec. 31..	Laborers	85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		86	9	.....	.....	.....	.....	1	.....	7	.....	10	2	20	5
<i>Portsmouth, N. H.—Augustus Jenkins, collector.</i>															
Quarter ending March 31.	No arrivals ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30..	Mechanic.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchant	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mason	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		6	.....	.....	.....	.....	.....	1	.....	1	.....	2	.....	.....	.....
Quarter ending Sept. 30..	Mechanics	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstress	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	3	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		5	6	1	.....	2	2	.....	2	.....	.....	.....	.....	.....	.....
Quarter ending Dec. 31..	Butcher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstress	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		6	13	.....	1	.....	2	.....	3	2	1	1	1	1	.....
<i>Boston—Arthur W. Austin, collector.</i>															
Quarter ending Mar. 31.	Artists	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butcher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 30 and under 35 years. Females from 30 and under 35 years.				Males from 35 and under 40 years. Females from 35 and under 40 years.				Males upwards of 40 years of age. Females upwards of 40 years of age.				Males, age not stated. Females, age not stated.				Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage. Females died on voyage.		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	British America.	27	9	36	United States...	27	9	36	.....	.....
4	2	6	.....	11	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	9	36	.....	27	9	36	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	British America.	120	30	150	United States ..	120	30	150	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120	30	150	.....	120	30	150	.....	.....
19	1	25	.....	11	14	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120	30	150	.....	120	30	150	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	134	50	184	United States...	134	50	184	.....	.....
4	2	20	6	23	14	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	134	50	184	.....	134	50	184	.....	.....
.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86	9	95	United States...	86	9	95	.....	.....
15	2	16	2	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86	9	95	.....	86	9	95	.....	.....
.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	4	United States...	6	.....	6	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	6	.....	6	.....	6	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	6	11	United States...	5	6	11	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	6	11	.....	5	6	11	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	4	7	United States...	6	13	19	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	3	5	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	6	7	.....	.....	.....	.....	.....	.....
.....	
.....	
.....	2	.....	.....	2	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	13	19	.....	6	13	19	.....	.....
.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3	British America.	93	14	107	.....	.....
.....	3	3	Australia.....	2	2	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	171	36	207	England.....	55	8	63	.....	.....

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
Boston—Continued.															
Quarter ending Mar. 31—Continued.	Clergyman	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	346	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painters.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Actors and actresses.....	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	99	160	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		735	166	14	24	5	10	8	6	47	90	121	26	167	31
Quarter ending June 30.	Artists.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	135	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	155	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	333	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	396	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	194	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	617	296	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1830	1044	53	70	51	48	53	62	194	191	412	225	417	169
Quarter ending Sept. 30.	Artists.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	139	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	126	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	243	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	168	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	123	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 20 and upwards of 30 years.	Females from 20 and upwards of 30 years.	Males from 35 and upwards of 40 years.	Females from 35 and upwards of 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
153	19	101	16	104	14	15	1	Ireland.....	34	94	58	France.....	7	6	13		
								Scotland.....	33	4	37	Germany.....	1		1		
								Wales.....	3		3	South America..	1		1		
								Great Britain....	3		3	Ireland.....	1		1		
								France.....	31	1	32	Italy.....	2		2		
								Italy.....	2		2	Mexico.....	1		1		
								Mexico.....	1		1	Prussia.....	1		1		
								Prussia.....	6	2	8	Poland.....	1		1		
								Poland.....	1	1	2	Scotland.....	30	1	31		
								Sweden.....	1		1	Sardinia.....	1		1		
								Spain.....	1		1	Spain.....	1		1		
								Sardinia.....	1		1	Wales.....	1		1		
								Switzerland.....	1		1	West Indies.....	6	1	7		
								Turkey.....	4		4	United States....	590	199	649		
								West Indies.....	8	9	10	Not stated.....	19	1	90		
								East Indies.....	1		1						
								Germany.....	97	6	33						
								British America..	168	93	169						
								South America....	2	1	3						
								United States....	291	55	276						
								Not stated.....	18	1	19						
153	19	101	16	104	14	15	1		735	166	901		735	166	901		
								Azores.....	63	39	102	British America..	593	167	710		
								Denmark.....	1		1	England.....	99	38	108		
								England.....	212	118	330	Egypt.....	2		2		
								Germany.....	39	8	40	East Indies.....	2		2		
								Egypt.....	2		2	France.....	2	1	3		
								France.....	12	2	14	Germany.....	2	4	12		
								Ireland.....	304	310	614	Ireland.....	1		1		
								Italy.....	1		1	Central America.	1		1		
								Portugal.....	63	39	109	Portugal.....	2		2		
								Prussia.....	2		2	South America..	3		3		
								Russia.....	1		1	Prussia.....	1		1		
								Scotland.....	45	35	80	Scotland.....	7	5	12		
								Switzerland.....	2		2	Switzerland.....	1		1		
								Sweden.....	1		1	West Indies.....	3		3		
								Spain.....	3	3	6	United States....	1298	798	2096		
								Sicily.....	1		1	Not stated.....	30	13	43		
								Turkey.....	5		5						
								West Indies.....	7		7						
								South America..	3		3						
								East Indies.....	2	2	4						
								Central America.	1		1						
								British America..	773	333	1106						
								United States....	325	142	467						
								Not stated.....	19	13	32						
941	95	149	57	297	119	13	17		1880	1044	2994		1880	1044	2994		
								Africa.....	2	3	5						
								Azores.....	72	36	108	British America..	998	990	588		
								England.....	218	149	367	England.....	25	12	37		
								France.....	11	4	15	France.....	3	1	4		
								Germany.....	25	6	31	Ireland.....	7	5	12		
								Holland.....	1		1	Italy.....	4		4		
								Ireland.....	371	466	837	Scotland.....	6	1	7		
								Italy.....	18		18	Spain.....	3		3		
								Portugal.....	30	27	57	Switzerland.....	2		2		
								Switzerland.....	2	1	3	France.....	3	1	4		
								Spain.....	11	3	14	Ireland.....	7	5	12		
								Sicily.....	3		3	Italy.....	4		4		
								Sardinia.....	3		3	Scotland.....	6	1	7		
								Sweden.....	68	66	134	Spain.....	3		3		
								Scotland.....	53	37	90	West Indies.....	2		2		
								Wales.....	1		1						

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Boston—Continued.</i>															
Quarter ending Sept. 30—Continued.	Not stated....	866	1,580	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1818	1631	121	137	95	94	96	89	165	261	316	416	309	900
Quarter ending Dec. 31..	Clergymen....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	148	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants....	213	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics....	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	531	866	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1906	884	54	51	51	54	42	68	74	130	183	215	217	198
<i>Edgartown—Constant Norton, collector.</i>															
Quarter ending March 31.	Mariners.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		3	3	1	1	.....	.....	.....	.....	.....	.....	2	1	.....	1
Quarter ending June 30..	Mariners.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		9	3	.....	.....	.....	.....	.....	.....	1	1	1	1	2	.....
Quarter ending Sept. 30..	Farmer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	6	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		7	4	2	2	.....	.....	2	.....	.....	1	.....	.....	.....	.....
Quarter ending Dec. 31 .	Mariners.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servant.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		8	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1	2	.....

—Continued.

Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 35 years.	Females from 25 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
...	West Indies....	14	3	17	United States....	123	149	272	...	...
...	British America....	492	492	974	Not stated....	237	163	400	...	...
...	United States....	499	309	731					...	...
...	Not stated....	11	19	30					...	...
234	134	146	81	314	185	20	23				1818	1691	3439		1818	1691	3439	9	3
...	British America....	376	306	684	Germany.....	4	9	6	...	...
...	Africa.....	...	1	1	South America...	1	...	1	...	...
...	Australia....	2	...	2	British America...	967	139	496	...	...
...	England.....	170	117	287	England.....	50	92	78	...	...
...	France.....	19	6	27	France.....	10	4	14	...	...
...	Germany.....	22	4	26	Holland.....	1	...	1	...	...
...	Holland.....	3	...	3	Ireland.....	1	...	1	...	...
...	Ireland.....	195	187	382	Italy.....	1	...	1	...	...
...	Italy.....	3	1	4	Mexico.....	1	1	2	...	...
...	Mexico.....	1	1	2	Prussia.....	2	...	2	...	...
...	Central America	...	1	1	Russia.....	1	...	1	...	...
...	Prussia.....	4	...	4	Switzerland....	2	...	2	...	...
...	Portugal.....	2	...	2	Sweden.....	1	...	1	...	...
...	Russia.....	1	...	1	Scotland.....	6	7	15	...	...
...	Spain.....	9	3	12	Turkey.....	1	1	2	...	...
...	Switzerland....	4	1	5	West Indies....	4	...	4	...	...
...	Sweden.....	4	...	4	United States....	736	602	1394	...	...
...	Scotland....	44	67	111	Not stated....	99	40	139	...	...
...	Turkey.....	3	1	4					...	...
...	West Indies....	5	...	5					...	...
...	Wales.....	2	...	2					...	...
...	United States...	396	160	486					...	...
...	Not stated....	11	24	35					...	...
168	88	172	63	237	85	6	4				1906	884	2090		1906	884	2090	9	...
...	South America...	1	2	3	United States...	3	3	6	...	...
...	United States...	2	1	3					...	...
...		3	3	6		3	3	6	...	...
...	United States...	9	3	12	United States...	5	3	12	...	...
1	1	...	3	1	...	...	...	...	...		9	3	12		9	3	12	...	...
...	France.....	5	4	9	United States...	7	4	11	...	...
...	England.....	1	...	1					...	...
...	United States...	1	...	1					...	...
...		7	4	11		7	4	11	...	...
...	England.....	1	...	1	England.....	1	...	1	...	...
...	Spain.....	1	...	1	Spain.....	1	...	1	...	...
...	Portugal.....	4	...	4	Portugal.....	4	...	4	...	...
...	United States...	2	1	3	United States...	2	1	3	...	...
2	1	...	2	...	...	...	...	...	...		8	1	9		8	1	9	...	...

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Boston—Continued.</i>															
Quarter ending Sept. 30—Continued.	Not stated....	866	1,580	....	....	....	....	....	....	....	....	....	....	....	....
		1818	1631	121	127	95	94	90	80	165	261	316	416	300	209
Quarter ending Dec. 31..	Clergymen....	9	....	....	....	....	....	....	....	....	....	....	....	....	....
	Clerks.....	6	....	....	....	....	....	....	....	....	....	....	....	....	....
	Farmers.....	39	....	....	....	....	....	....	....	....	....	....	....	....	....
	Physicians....	8	....	....	....	....	....	....	....	....	....	....	....	....	....
	Seamstresses..	....	14	....	....	....	....	....	....	....	....	....	....	....	....
	Engineers.....	11	....	....	....	....	....	....	....	....	....	....	....	....	....
	Lawyers.....	2	....	....	....	....	....	....	....	....	....	....	....	....	....
	Laborers.....	148	....	....	....	....	....	....	....	....	....	....	....	....	....
	Merchants.....	213	....	....	....	....	....	....	....	....	....	....	....	....	....
	Mariners.....	73	....	....	....	....	....	....	....	....	....	....	....	....	....
	Manufacturers..	6	....	....	....	....	....	....	....	....	....	....	....	....	....
	Musicians.....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
	Mechanics.....	81	....	....	....	....	....	....	....	....	....	....	....	....	....
	Teachers.....	2	....	....	....	....	....	....	....	....	....	....	....	....	....
	Weavers.....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
	Others.....	46	....	....	....	....	....	....	....	....	....	....	....	....	....
	Not stated....	531	868	....	....	....	....	....	....	....	....	....	....	....	....
		1906	884	54	51	51	54	42	68	74	136	183	215	217	126
<i>Edgartown—Constant Norton, collector.</i>															
Quarter ending March 31.	Mariners.....	2	....	....	....	....	....	....	....	....	....	....	....	....	....
	Not stated....	1	3	....	....	....	....	....	....	....	....	....	....	....	....
		3	3	1	1	....	....	....	....	....	....	2	1	....	1
Quarter ending June 30..	Mariners.....	3	....	....	....	....	....	....	....	....	....	....	....	....	....
	Mechanics.....	4	....	....	....	....	....	....	....	....	....	....	....	....	....
	Engineer.....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
	Not stated....	1	3	....	....	....	....	....	....	....	....	....	....	....	....
		9	3	....	....	....	....	....	....	1	1	1	1	2	....
Quarter ending Sept. 30..	Farmer.....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
	Not stated....	6	4	....	....	....	....	....	....	....	....	....	....	....	....
		7	4	2	2	....	....	2	....	1	....	....	....	....	....
Quarter ending Dec. 31.	Mariners.....	7	....	....	....	....	....	....	....	....	....	....	....	....	....
	Servant.....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
	Not stated....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
		8	1	....	....	....	....	....	....	1	....	....	1	2	....

—Continued.

Males from 30 and under 35 years. Females from 30 and under 35 years. Males from 35 and under 40 years. Females from 35 and under 40 years. Males upwards of 40 years of age. Females upwards of 40 years of age. Males, age not stated. Females, age not stated.								Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
...	...	...	...	...	...	...	...	West Indies.....	14	3	17	United States...	1333	149	2388	...	...
...	...	...	...	...	...	...	...	British America.....	482	492	974	Not stated.....	237	163	400	...	...
...	...	...	...	...	...	...	...	United States.....	432	309	731						
...	...	...	...	...	...	...	...	Not stated.....	11	19	30						
236	124	146	81	314	183	20	23		1818	1621	3439		1818	1621	3439	9	3
...	...	...	...	...	...	...	...	British America.....	376	306	684	Germany.....	4	2	6	...	...
...	...	...	...	...	...	...	...	Africa.....	1	1	2	South America.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Australia.....	2	...	2	British America.....	267	139	406	...	...
...	...	...	...	...	...	...	...	England.....	170	117	287	England.....	50	26	76	...	...
...	...	...	...	...	...	...	...	France.....	19	8	27	France.....	10	4	14	...	...
...	...	...	...	...	...	...	...	Germany.....	22	4	26	Holland.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Holland.....	3	...	3	Ireland.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Ireland.....	185	187	372	Italy.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Italy.....	3	1	4	Mexico.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Mexico.....	1	1	2	Prussia.....	2	...	2	...	...
...	...	...	...	...	...	...	...	Central America.....	...	1	1	Russia.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Prussia.....	4	...	4	Switzerland.....	2	...	2	...	...
...	...	...	...	...	...	...	...	Portugal.....	2	...	2	Sweden.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Russia.....	1	...	1	Scotland.....	6	7	13	...	...
...	...	...	...	...	...	...	...	Spain.....	9	3	12	Turkey.....	1	1	2	...	...
...	...	...	...	...	...	...	...	Switzerland.....	4	1	5	West Indies.....	4	...	4	...	...
...	...	...	...	...	...	...	...	Sweden.....	4	...	4	United States.....	732	662	1394	...	...
...	...	...	...	...	...	...	...	Scotland.....	44	67	111	Not stated.....	99	40	139	...	...
...	...	...	...	...	...	...	...	Turkey.....	3	1	4						
...	...	...	...	...	...	...	...	West Indies.....	5	...	5						
...	...	...	...	...	...	...	...	Wales.....	2	...	2						
...	...	...	...	...	...	...	...	United States.....	396	180	576						
...	...	...	...	...	...	...	...	Not stated.....	11	24	35						
168	86	173	62	237	63	6	4		1206	681	2090		1206	681	2090	2	..
...	...	...	...	...	...	...	...	South America.....	1	2	3	United States...	3	3	6	...	...
...	...	...	...	...	...	...	...	United States.....	2	1	3						
...	...	...	...	...	...	...	...		3	3	6						
...	...	...	...	...	...	...	...	United States.....	9	3	12	United States...	9	3	12	...	...
...	...	...	...	...	...	...	...		9	3	12						
...	...	...	...	...	...	...	...	France.....	5	4	9	United States...	7	4	11	...	...
...	...	...	...	...	...	...	...	England.....	1	...	1						
...	...	...	...	...	...	...	...	United States.....	1	...	1						
...	...	...	...	...	...	...	...		7	4	11						
...	...	...	...	...	...	...	...	England.....	1	...	1	England.....	1	...	1	...	...
...	...	...	...	...	...	...	...	Spain.....	1	...	1	Spain.....	1	...	1	...	...
...	...	...	...	...	...	...	...	Portugal.....	4	...	4	Portugal.....	4	...	4	...	...
...	...	...	...	...	...	...	...	United States.....	2	1	3	United States...	9	1	3	...	...
...	...	...	...	...	...	...	...		8	1	9						

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.
<i>Fall River—P. W. Leland, collector.</i>															
Quarter ending March 31.	No arrivals ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30.	Farmer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	3	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		4	6	.....	2	2	1	2	1	.....	.....	.....	.....	.....	.....
Quarter ending Sept. 30.	Servants .....	.....	3	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	.....
Quarter ending Dec. 31.	No arrivals ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>New Bedford—C. B. H. Fessenden, collector.</i>															
Quarter ending March 31.	No arrivals ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30.	Shoemaker ...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerk	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		22	2	.....	1	.....	1	.....	1	1	1	5	.....	4	.....
Quarter ending Sept. 30.	Merchants	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemaker	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanic	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	14	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	7	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		41	11	5	2	1	.....	3	2	5	2	9	1	5	1
Quarter ending Dec. 31.	Servants .....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		41	13	1	2	.....	2	2	1	2	3	3	.....	15	2
<i>Bristol and Warren—G. H. Reynolds, collector.</i>															
Quarter ending March 31.	Engineers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Quarter ending June 30.	No arrivals ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Sept. 30.	Merchant	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Dec. 31.	No arrivals ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 35 years.	Females from 25 and under 35 years.	Males upwards of 35 years of age.	Females upwards of 35 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
.....
.....	British America.	4	6	10	United States...	4	6	10	...	...
.....	4	6	10	.....	4	6	10	...	...
.....	British America.	.....	3	3	United States...	.....	3	3	...	...
.....
.....	British America.	3	2	5	British America.	2	.....	2	.....	.....
.....	Portugal.....	1	.....	1	Sandwich Isles	3	.....	3	.....	.....
.....	Ireland.....	1	.....	1	Cape Verde Isles	2	.....	2	.....	.....
.....	Cape Verde Isles	2	.....	2	United States...	15	2	17	.....	.....
.....	Sandwich Isles	3	.....	3	.....	.....	.....	.....	.....	.....
.....	United States...	12	.....	12	.....	.....	.....	.....	.....	.....
3	4	2	1	1	.....	.....	.....	.....	22	2	24	.....	22	2	24	.....	.....
.....	British America.	3	.....	3	Denmark.....	3	2	5	.....	.....
.....	Denmark.....	.....	2	2	Sandwich Isles	1	.....	1	.....	.....
.....	Scotland.....	1	.....	1	Azores.....	26	8	34	.....	.....
.....	Sandwich Isles	1	.....	1	United States...	11	1	12	.....	.....
.....	Azores.....	26	8	34	.....	.....	.....	.....	.....	.....
.....	United States...	7	1	8	.....	.....	.....	.....	.....	.....
3	2	4	6	1	.....	.....	.....	.....	41	11	52	.....	41	11	52	.....	.....
.....	England.....	1	.....	1	England.....	1	.....	1	.....	.....
.....	Azores.....	29	13	42	Azores.....	29	13	42	.....	.....
.....	United States...	11	.....	11	United States...	11	.....	11	.....	.....
5	1	7	6	1	.....	.....	.....	.....	41	13	54	.....	41	13	54	.....	.....
.....
.....	United States...	2	.....	2	United States...	2	.....	2	.....	.....
.....
.....	Spain.....	1	.....	1	Spain.....	1	.....	1	.....	.....
.....

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Providence—James A. Aborn, collector.</i>															
Quarter ending March 31.	Teacher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated .....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1	2	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Quarter ending June 30..	Mechanics.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artist	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weaver.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mason.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miner.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		9	7	1	.....	.....	.....	.....	1	.....	1	1	5	5	.....
Quarter ending Sept. 30.	Mariners	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchant.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Boatmen.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		15	22	1	1	.....	.....	.....	1	1	4	4	4	3	4
Quarter ending Dec. 31..	Not stated....	2	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
<i>New York City—Augustus Schell, collector.</i>															
Quarter ending March 31	Farmers.....	1574	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	1443	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	1043	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	1781	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	1192	3422	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		7660	3492	393	422	328	268	218	207	855	602	1651	692	1768	522
Quarter ending June 30..	Farmers.....	4886	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	3003	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	5352	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	1765	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	1441	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 35 years.	Females from 25 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
...	United States...	1	2	3	United States...	1	2	3	...	...
...	1	1	...	...	...	1	2	3	...	1	2	3	...	...
...	Great Britain...	...	2	2	United States...	9	7	16	...	...
...	British America...	3	4	7	...	...	...	...	...	...
...	Germany...	3	1	4	...	...	...	...	...	...
...	United States...	3	...	3	...	...	...	...	...	...
2	9	7	16	...	9	7	16	...	...
...	England...	...	3	3	Great Britain...	1	...	1	...	...
...	Great Britain...	2	1	3	British America...	9	7	9	...	...
...	British America...	8	18	26	United States...	12	15	27	...	...
...	United States...	5	...	5	...	...	...	...	...	...
3	2	1	2	2	4	...	...	...	...	...	15	22	37	...	15	22	37	...	...
...	Africa...	2	...	2	United States...	2	...	2	...	...
...	England...	1107	501	1606	United States...	7660	3422	11082	...	...
...	Ireland...	994	679	1678	...	...	...	...	...	...
...	Scotland...	156	67	223	...	...	...	...	...	...
...	Wales...	17	7	24	...	...	...	...	...	...
...	Great Britain...	616	343	959	...	...	...	...	...	...
...	Prussia...	136	107	243	...	...	...	...	...	...
...	Switzerland...	40	28	68	...	...	...	...	...	...
...	France...	177	79	256	...	...	...	...	...	...
...	Belgium...	9	5	14	...	...	...	...	...	...
...	Holland...	26	5	31	...	...	...	...	...	...
...	Denmark...	1	...	1	...	...	...	...	...	...
...	Poland...	4	1	5	...	...	...	...	...	...
...	Germany...	1399	1021	2420	...	...	...	...	...	...
...	Russia...	3	...	3	...	...	...	...	...	...
...	Italy...	74	43	117	...	...	...	...	...	...
...	Spain...	16	5	21	...	...	...	...	...	...
...	Sardinia...	81	41	122	...	...	...	...	...	...
...	Portugal...	4	...	4	...	...	...	...	...	...
...	Sicily...	3	...	3	...	...	...	...	...	...
...	Turkey...	4	...	4	...	...	...	...	...	...
...	South America...	11	...	11	...	...	...	...	...	...
...	West Indies...	33	2	35	...	...	...	...	...	...
...	Mexico...	2	...	2	...	...	...	...	...	...
...	United States...	2747	486	3235	...	...	...	...	...	...
885	918	790	1298	743	953	...	...	...	...	...	7660	3422	11082	...	7660	3422	11082	32	36
...	England...	2080	1939	3318	United States...	20270	12800	33130	...	...
...	Ireland...	4603	3629	8232	...	...	...	...	...	...
...	Scotland...	324	253	576	...	...	...	...	...	...
...	Wales...	50	34	84	...	...	...	...	...	...
...	Great Britain...	2075	1505	3580	...	...	...	...	...	...
...	Spain...	117	23	140	...	...	...	...	...	...
...	France...	356	216	571	...	...	...	...	...	...

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 years.	Females from 25 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.
<i>New York City—Contin'd</i>																			
Quarter ending June 31—Continued.	Lawyers.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	3754	19860	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Sept. 30.	Farmers.....	5633	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	4833	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	3337	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	1846	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	836	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	4391	14422	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Dec. 31..	Farmers.....	2707	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	1968	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	2180	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	3037	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	709	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated....	2512	8789	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Onoogo—O. Robinson, collector.																			
Quarter ending March 31	No arrivals....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		13162	8789	891	850	647	635	633	577	1091	1830	3502	1003	9444	1178				

—Continued.

Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
.....	Belgium	30	19	49	.....	.....	.....	.....	.....	.....
.....	Holland	56	36	92	.....	.....	.....	.....	.....	.....
.....	Germany	5811	4333	10144	.....	.....	.....	.....	.....	.....
.....	Switzerland	304	175	479	.....	.....	.....	.....	.....	.....
.....	Prussia	315	242	557	.....	.....	.....	.....	.....	.....
.....	Denmark	190	90	280	.....	.....	.....	.....	.....	.....
.....	Portugal	5	2	7	.....	.....	.....	.....	.....	.....
.....	Italy	81	40	121	.....	.....	.....	.....	.....	.....
.....	Sicily	7	2	9	.....	.....	.....	.....	.....	.....
.....	West Indies ..	95	30	125	.....	.....	.....	.....	.....	.....
.....	South America ..	21	14	35	.....	.....	.....	.....	.....	.....
.....	Mexico	4	.....	4	.....	.....	.....	.....	.....	.....
.....	Madeira Isles ..	3	2	5	.....	.....	.....	.....	.....	.....
.....	United States ..	3797	966	4763	.....	.....	.....	.....	.....	.....
1898	786	1009	710	3132	1163	.....	.....	.....	30270	12660	33130	.....	30270	12660	33130	34	29
.....	England	2740	1779	4519	United States ...	31257	14422	35679	.....	.....
.....	Ireland	4357	3784	8141	.....	.....	.....	.....	.....	.....
.....	Scotland	200	163	363	.....	.....	.....	.....	.....	.....
.....	Wales	37	31	68	.....	.....	.....	.....	.....	.....
.....	Great Britain ..	2304	1807	4115	.....	.....	.....	.....	.....	.....
.....	France	217	115	332	.....	.....	.....	.....	.....	.....
.....	Spain	198	39	237	.....	.....	.....	.....	.....	.....
.....	Italy	142	92	234	.....	.....	.....	.....	.....	.....
.....	Belgium	42	26	68	.....	.....	.....	.....	.....	.....
.....	Switzerland	80	42	122	.....	.....	.....	.....	.....	.....
.....	Holland	20	6	26	.....	.....	.....	.....	.....	.....
.....	Russia ..	114	103	217	.....	.....	.....	.....	.....	.....
.....	Prussia	229	181	410	.....	.....	.....	.....	.....	.....
.....	Sweden	121	86	207	.....	.....	.....	.....	.....	.....
.....	Germany	7172	5804	12976	.....	.....	.....	.....	.....	.....
.....	West Indies	79	24	103	.....	.....	.....	.....	.....	.....
.....	Sardinia	42	40	82	.....	.....	.....	.....	.....	.....
.....	United States ..	3083	970	4053	.....	.....	.....	.....	.....	.....
1894	952	1716	886	3352	1237	.....	.....	.....	31257	14422	35679	.....	31257	14422	35679	33	18
.....	England	1456	966	2422	United States ...	13162	8789	21951	.....	.....
.....	Ireland	2632	1955	4587	.....	.....	.....	.....	.....	.....
.....	Scotland	149	103	252	.....	.....	.....	.....	.....	.....
.....	Wales	53	38	91	.....	.....	.....	.....	.....	.....
.....	Great Britain ..	1787	1588	3375	.....	.....	.....	.....	.....	.....
.....	British America ..	2	3	5	.....	.....	.....	.....	.....	.....
.....	Germany	3023	2970	6993	.....	.....	.....	.....	.....	.....
.....	West Indies	60	13	73	.....	.....	.....	.....	.....	.....
.....	Holland	11	4	15	.....	.....	.....	.....	.....	.....
.....	Spain	66	16	82	.....	.....	.....	.....	.....	.....
.....	South America ..	7	4	11	.....	.....	.....	.....	.....	.....
.....	Switzerland	72	35	107	.....	.....	.....	.....	.....	.....
.....	Prussia	171	93	264	.....	.....	.....	.....	.....	.....
.....	France	262	142	404	.....	.....	.....	.....	.....	.....
.....	Italy	67	16	83	.....	.....	.....	.....	.....	.....
.....	Belgium	22	6	28	.....	.....	.....	.....	.....	.....
.....	Russia	5	1	6	.....	.....	.....	.....	.....	.....
.....	China	7	.....	7	.....	.....	.....	.....	.....	.....
.....	Mexico	3	.....	3	.....	.....	.....	.....	.....	.....
.....	Sardinia	21	.....	21	.....	.....	.....	.....	.....	.....
.....	Sweden	14	10	24	.....	.....	.....	.....	.....	.....
.....	Sicily	6	3	9	.....	.....	.....	.....	.....	.....
.....	United States ..	2933	810	3743	.....	.....	.....	.....	.....	.....
1234	549	1922	572	1532	797	.....	.....	.....	13162	8789	21951	.....	13162	8789	21951	17	19

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 45 years.	Females from 30 and under 45 years.	Males from 45 and under 60 years.	Females from 45 and under 60 years.
<i>Oswego—Continued.</i>															
Quarter ending June 30..	Müller	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergyman	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Milliners .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	35	43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		180	55	.....	.....	.....	.....	3	.....	.....	2	25	22	40	10
Quarter ending Sept. 30..	Farmers	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Hatter	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weaver	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butchers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Baker	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Actors	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants .....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Millers	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printers	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	48	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		494	176	.....	.....	3	2	1	6	15	24	58	36	124	34
Quarter ending Dec. 31..	Farmers	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailor	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butcher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Müller	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	6	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		144	23	.....	.....	.....	.....	.....	1	2	1	14	6	61	2

—Continued.

Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
.....	Germany.....	5	9	14	England.....	4	1	5	.....	.....
.....	British America.....	78	37	115	British America.....	53	90	143	.....	.....
.....	United States.....	69	10	79	United States.....	195	38	233	.....	.....
.....	England.....	10	3	13	Not stated.....	8	2	10	.....	.....
.....	Ireland.....	21	1	22	.....	.....	.....	.....	.....	.....
.....	Africa.....	2	1	3	.....	.....	.....	.....	.....	.....
.....	Italy.....	1	1	2	.....	.....	.....	.....	.....	.....
.....	Not stated.....	4	1	5	.....	.....	.....	.....	.....	.....
30	6	29	5	54	10	.....	.....		190	55	245		190	55	245	...	...
.....	British America.....	188	78	266	British America.....	107	47	154	.....	.....
.....	England.....	13	3	16	England.....	9	1	10	.....	.....
.....	Ireland.....	44	19	63	Ireland.....	1	1	2	.....	.....
.....	Scotland.....	3	.....	3	United States.....	366	132	498	.....	.....
.....	Wales.....	3	.....	3	Not stated.....	11	.....	11	.....	.....
.....	France.....	3	1	4	.....	.....	.....	.....	.....	.....
.....	Italy.....	1	.....	1	.....	.....	.....	.....	.....	.....
.....	Germany.....	4	1	5	.....	.....	.....	.....	.....	.....
.....	United States.....	235	74	309	.....	.....	.....	.....	.....	.....
96	29	60	12	137	33	.....	.....		491	176	670		494	176	670	...	...
.....	British America.....	66	90	156	British America.....	51	13	64	.....	.....
.....	United States.....	77	12	89	United States.....	93	90	183	.....	.....
.....	Italy.....	1	.....	1	.....	.....	.....	.....	.....	.....
.....	England.....	.....	1	1	.....	.....	.....	.....	.....	.....
31	8	11	1	25	9	.....	1		144	53	197		144	53	197	...	...

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.
<i>Detroit—M. Shoemaker, collector.</i>															
Quarter ending March 31.	No returns.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30.	Farmers.....	453	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	201	586	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		691	588	59	56	49	40	95	57	100	64	71	71	118	98
Quarter ending Sept. 30.	Mechanics.....	121	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	125	346	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		336	346	84	36	36	38	55	50	57	49	32	48	54	60
Quarter ending Dec. 31.	Not stated.....	567	522	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		567	522	47	40	50	44	68	63	74	71	67	57	81	69
<i>Philadelphia—J. B. Baker, collector.</i>															
Quarter ending Mar. 31.	Farmers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchant.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	38	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		72	48	5	4	9	6	6	2	16	7	15	10	17	7
Quarter ending June 30.	Farmers.....	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers and spinners.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	192	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	2	197	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	78	214	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		427	411	24	18	19	23	21	48	61	109	113	115	64	31
Quarter ending Sept. 30.	Farmers.....	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
97	86	72	78	30	36	...	...	Ireland	9	7	16	United States...	691	588	1279	...	...
...	British America.	67	55	122	...	...	...	...	...	...
...	England	10	8	18	...	...	...	...	...	...
...	Scotland	18	14	32	...	...	...	...	...	...
...	Norway	587	504	1091	...	...	...	...	...	...
...	691	588	1279	...	691	588	1279	...	...
...	British America.	72	74	146	United States...	336	346	682	...	...
...	Norway	135	125	260	...	...	...	...	...	...
...	England	78	90	168	...	...	...	...	...	...
...	Ireland	29	27	56	...	...	...	...	...	...
...	Scotland	22	30	52	...	...	...	...	...	...
...	336	346	682	...	336	346	682	...	...
...	Norway and Sweden	349	342	691	United States...	567	522	1089	...	...
...	British America.	131	104	235	...	...	...	...	...	...
...	Ireland	38	32	70	...	...	...	...	...	...
...	England	39	36	75	...	...	...	...	...	...
...	Scotland	10	8	18	...	...	...	...	...	...
...	567	522	1089	...	567	522	1089	...	...
...	England	18	16	34	United States...	78	46	124	...	...
...	Ireland	14	22	40	...	...	...	...	...	...
...	Scotland	3	...	3	...	...	...	...	...	...
...	France	3	...	3	...	...	...	...	...	...
...	Spain .....	...	3	3	...	...	...	...	...	...
...	Italy	16	...	16	...	...	...	...	...	...
...	Germany	9	2	11	...	...	...	...	...	...
...	Holland	1	...	1	...	...	...	...	...	...
...	South America...	9	1	10	...	...	...	...	...	...
...	United States...	15	4	19	...	...	...	...	...	...
...	74	46	120	...	78	46	124	...	...
...	England	53	28	81	British America.	1	...	1	...	...
...	Scotland	9	...	9	West Indies...	1	...	1	...	...
...	Ireland	296	310	606	South America...	1	...	1	...	...
...	Germany	30	27	57	England	5	...	5	...	...
...	Denmark	1	...	1	Spain	1	...	1	...	...
...	Italy	4	3	7	Germany	1	...	1	...	...
...	France	1	...	1	United States...	417	411	828	...	...
...	Spain	1	...	1	...	...	...	...	...	...
...	British America.	3	...	3	...	...	...	...	...	...
...	South America...	12	3	15	...	...	...	...	...	...
...	West Indies...	23	5	28	...	...	...	...	...	...
...	United States...	71	35	106	...	...	...	...	...	...
...	427	411	838	...	427	411	838	...	...
...	England	72	66	138	Sweden	1	1	2	...	...
...	Ireland	293	414	709	Spain	2	...	2	...	...
...	Scotland	5	4	9	West Indies...	6	2	8	...	...
...	Wales	10	9	19	South America...	5	...	5	...	...
...	Germany	5	5	10	United States...	475	558	1033	...	...

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.
<i>Philadelphia—Continued</i>																	
Quarter ending Sept. 30—Continued.	Weavers	4	2														
	Laborers	213															
	Servants	2	143														
	Others	4															
	Not stated	141	416														
		429	561	34	32	34	29	36	36	98	148	121	140	51	65		
Quarter ending Dec. 31..	Farmers	41															
	Mechanics	74															
	Miners	1															
	Mariners	2															
	Merchants	12															
	Weavers	10															
	Servants	5	8														
	Laborers	49															
	Not stated	85	294														
		279	302	33	33	24	23	18	16	42	55	57	65	30	36		
<i>Baltimore—Jno. Thomson Mason, collector.</i>																	
Quarter ending Mar. 31..	Laborers	37															
	Engineers	3															
	Farmers	3															
	Hatter	1															
	Painter	1															
	Tailor	1															
	Clergyman	1															
	Clerk	1															
	Teacher	1															
	Physician	1															
	Mariners	2															
	Merchants	3															
	Mechanics	1															
	Others	6	3														
	Not stated	9	3														
		71	6	4						1	1	34	1	17			
Quarter ending June 30..	Mariners	21															
	Merchants	15															
	Clergyman	1															
	Laborer	1															
	Mechanics	76															
	Farmers	165															
	Millers	5															
	Bakers	5															
	Musicians	2															
	Engineer	1															
	Butchers	2															
	Servants	3	107														
	Miners	2															
	Lawyer	1															
	Seamstresses		2														
	Teachers	2															
	Others	4															
	Not stated	59	138														
		365	267	22	24	11	18	15	7	60	44	68	71	80	42		
Quarter ending Sept. 30.	Artists	5															
	Engineers	2															

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Baltimore—Continued.</i>															
Quarter ending Sept. 30—Continued.	Clerks	7													
	Mechanics	306													
	Servants		183												
	Butchers	14													
	Farmers	449													
	Laborers	35													
	Bakers	14													
	Musicians	1													
	Physicians	4													
	Lawyers	2													
	Millers	9													
	Teachers	5													
	Milliners, &c.		2												
	Merchants	33													
	Weavers, &c.	5													
	Mariners	2													
	Others	21	1												
	Not stated	946	842												
		1162	1053	70	77	65	75	72	51	192	171	194	251	942	171
Quarter ending Dec. 31..	Farmers	183													
	Servants		116												
	Mechanics	107													
	Merchants	24													
	Laborers	13													
	Mariners	4													
	Miners	2													
	Butchers	2													
	Engineers	2													
	Artist	1													
	Clerk	1													
	Miller	1													
	Musician	1													
	Teacher	1													
	Bakers	4													
	Others	10													
	Not stated	150	444												
		506	562	45	45	39	46	29	21	90	115	62	133	74	72
<i>Newbern—W. G. Singleton, collector.</i>															
Quarter ending March 31..	No arrivals														
Quarter ending June 30..	No arrivals														
Quarter ending Sept. 30..	No arrivals														
Quarter ending Dec. 31..	Engineer	1													
	Not stated	1	1										1	1	
		2	1	1									1	1	
<i>Charleston—W. F. Colcock, collector.</i>															
Quarter ending March 31..	Merchants	104													
	Lawyers	4													
	Farmers	3													
	Servants	2	5												
	Clergyman	1													
	Physicians	3													

—Continued.

Males from 30 and under 35 years	Females from 30 and under 35 years	Males from 35 and under 40 years	Females from 35 and under 40 years	Males upwards of 40 years of age	Females upwards of 40 years of age	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
116	82	66	50	139	125			Sweden.....	1	2	3						
								England.....	2	7	9						
								Denmark.....	2	2	4						
								Liberia.....	1	2	3						
								Malta.....	2	2	4						
								Germany.....	1018	975	1993						
								South America..	2	1	3						
								West Indies....	7	7	14						
								Madeira Isles...	2	5	7						
									1162	1053	2215		1162	1053	2215	2	1
								Ireland.....	3	2	5	United States...	506	562	1068		
								England.....	1	1	2						
								Prussia.....	26	29	55						
								Germany.....	415	609	994						
								British America.	2	2	4						
								West Indies....	2	2	4						
								South America..	3	1	4						
								United States...	52	22	74						
									506	562	1068		506	562	1068		
								France.....	2	1	3	United States...	2	1	3		
									2	1	3		2	1	3		
								Spain.....	9	5	14	Spain.....	8	6	14		
								South America..	1	1	2	United States...	124	68	192		
								Italy.....	29	21	50						
								United States...	153	43	196						

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 45 years.	Females from 35 and under 45 years.
<i>Charleston—Continued.</i>															
Quarter ending March 31.	Mariners	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerk	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians	29	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	20	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		192	62	2	9	3	4	.....	3	.....	2	10	9	46	.....
Quarter ending June 30.	Merchants	155	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	16	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians	5	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	48	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		271	78	10	1	10	1	.....	.....	2	6	16	24	46	17
Quarter ending Sept. 30.	Merchants	62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariner	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	7	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		101	23	.....	1	1	2	2	.....	.....	.....	5	8	27	3
Quarter ending Dec. 31.	Engineers	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painter	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	15	102	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		189	102	7	5	6	7	.....	.....	46	22	22	20	20	22
<i>Key West—John P. Baldwin, collector.</i>															
Quarter ending Mar. 31.	Merchants	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[illegible]

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Key West—Continued.</i>															
Quarter ending Mar. 31—Continued.	Mariners	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	1	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		46	12	.....	.....	.....	1	1	.....	.....	2	3	.....	1	2
Quarter ending June 30.	Merchants.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		49	5	.....	.....	.....	.....	1	.....	1	1	2	1	13	1
Quarter ending Sept. 30.	Merchants.....	154	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerk.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailor.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	29	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		224	63	10	9	4	4	2	.....	10	5	37	12	63	16
Quarter ending Dec. 31..	Merchants.....	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		66	7	.....	.....	.....	.....	.....	.....	4	1	23	1	19	3
<i>McMie—T. Sanford, collector.</i>															
Quarter ending Mar. 31..	No arrivals .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30..	Farmers.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamen.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	7	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		51	23	1	2	4	.....	4	3	3	1	12	6	12	4
Quarter ending Sept. 30..	Clerk.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariner.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		7	1	.....	.....	.....	.....	.....	1	.....	.....	3	.....	1	.....

—Continued.

Males from 20 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
13	4	6	1	10	2			United States...	7		7						
									46	19	58		46	19	58		
								Spain	9		9	United States...	49	5	47		
								France	1		1						
								West Indies...	2	5	7						
								United States...	30		30						
6	1	8		11	1				49	5	47		49	5	47		
								Spain	162		162	West Indies....	10		10		
								West Indies...	31		31	United States...	274	63	337		
								United States...	91	63	154						
73	6	33	2	50	9				264	63	347		264	63	347		
								Spain	1		1	United States...	66	7	73		
								West Indies...	54	6	60						
								United States...	11	1	12						
13	1	1	1	6					66	7	73		66	7	73		
								Great Britain...	1	1	2	Great Britain....	1		1		
								Ireland	17	19	36	United States..	50	23	73		
								France	2		2						
								Germany	3		3						
								Sweden	2		2						
								Sardinia	12	9	21						
								West Indies...	1		1						
								United States...	13	1	14						
9		1	1	5	4				51	23	74		51	23	74		
								Mexico	2		2	United States...	6	1	7		
								United States...	5	1	6	Mexico	1		1		
1									7	1	8		7	1	8		

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.	Males from 30 and under 35 years.	Females from 30 and under 35 years.
<i>Mobile—Continued.</i>																	
Quarter ending Dec. 31..	Engineer.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchant.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Other.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		7	7	.....	3	.....	1	.....	3	.....	.....	.....	.....	1	1	.....	.....
<i>N. Orleans—F. H. Hatch, collector.</i>																	
Quarter ending Mar. 31..	Farmers.....	753	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	146	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	186	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	.....	67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	263	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painters.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butchers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bakers.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Millers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	135	603	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1630	603	68	64	123	100	72	66	143	131	264	186	269	166	.....	.....
Quarter ending June 30..	Farmers.....	262	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	193	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	.....	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers.....	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors.....	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	196	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	306	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painters.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	.....	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butcher.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bakers.....	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers.....	.....	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Millers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	140	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	406	1300	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		2246	1429	123	140	150	146	97	78	250	203	353	277	280	160	.....	.....

—Continued.

Males from 20 and under 25 years of age.	Females from 20 and under 25 years of age.	Males from 25 and under 35 years of age.	Females from 25 and under 35 years of age.	Males from 35 and under 40 years of age.	Females from 35 and under 40 years of age.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
.....	Great Britain....	1	.....	1	West Indies....	1	.....	1	.....	.....
.....	West Indies....	2	.....	2	United States...	6	7	13	.....	.....
.....	United States...	4	7	11	.....	.....	.....	.....	.....	.....
3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	7	14	.....	7	7	14	.....	.....
.....	United States...	469	114	583	Spain.....	1	.....	1	.....	.....
.....	England.....	41	24	65	United States...	1629	893	2522	.....	.....
.....	Ireland.....	199	193	392	Country and sex not stated....	.....	.....	196	.....	.....
.....	Scotland....	15	5	20	.....	.....	.....	.....	.....	.....
.....	France.....	209	90	299	.....	.....	.....	.....	.....	.....
.....	Germany.....	430	314	744	.....	.....	.....	.....	.....	.....
.....	Prussia.....	34	33	67	.....	.....	.....	.....	.....	.....
.....	Italy.....	106	41	147	.....	.....	.....	.....	.....	.....
.....	Sicily.....	16	21	37	.....	.....	.....	.....	.....	.....
.....	Spain.....	77	4	81	.....	.....	.....	.....	.....	.....
.....	Mexico.....	43	14	57	.....	.....	.....	.....	.....	.....
.....	Belgium.....	3	1	4	.....	.....	.....	.....	.....	.....
.....	West Indies....	8	9	17	.....	.....	.....	.....	.....	.....
.....	Holland.....	2	.....	2	.....	.....	.....	.....	.....	.....
.....	Russia.....	4	1	5	.....	.....	.....	.....	.....	.....
.....	Switzerland....	29	27	56	.....	.....	.....	.....	.....	.....
.....	Norway.....	1	.....	1	.....	.....	.....	.....	.....	.....
.....	Central America	4	2	6	.....	.....	.....	.....	.....	.....
.....	Country and sex not stated....	.....	.....	196	.....	.....	.....	.....	.....	.....
219	79	155	67	275	107	196	.....	.....	.....	.....	1630	893	2522	.....	1630	893	2522	2	.....
.....	United States...	508	199	637	United States...	2945	1430	3665	.....	.....
.....	Germany.....	931	814	1745	Spain.....	3	.....	3	.....	.....
.....	Prussia.....	120	90	210	West Indies....	1	2	3	.....	.....
.....	France.....	199	81	280	Country and sex not stated....	.....	.....	79	.....	.....
.....	England.....	79	66	145	.....	.....	.....	.....	.....	.....
.....	Ireland.....	126	118	243	.....	.....	.....	.....	.....	.....
.....	Scotland.....	4	6	10	.....	.....	.....	.....	.....	.....
.....	Wales.....	.....	2	2	.....	.....	.....	.....	.....	.....
.....	Sweden.....	1	2	3	.....	.....	.....	.....	.....	.....
.....	Sicily.....	21	9	30	.....	.....	.....	.....	.....	.....
.....	Italy.....	23	2	25	.....	.....	.....	.....	.....	.....
.....	Switzerland....	70	45	115	.....	.....	.....	.....	.....	.....
.....	Spain.....	103	90	192	.....	.....	.....	.....	.....	.....
.....	West Indies....	1	2	3	.....	.....	.....	.....	.....	.....
.....	Mexico.....	62	27	89	.....	.....	.....	.....	.....	.....
.....	Central America	2	.....	2	.....	.....	.....	.....	.....	.....
.....	Country and sex not stated....	.....	.....	72	.....	.....	.....	.....	.....	.....
200	121	199	81	285	193	72	.....	.....	.....	.....	2049	1429	3743	.....	2049	1429	3743	1	2

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>New Orleans—Continued.</i>															
Quarter ending Sept. 30..	Farmers.....	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemaker.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	7	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painter.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artist.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Actors.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	34	168	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		385	173	14	11	21	18	19	13	21	23	71	32	63	27
Quarter ending Dec. 31..	Farmers.....	2094	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	293	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	363	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers.....	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors.....	81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Seamstresses.....	18	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	287	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerks.....	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineers.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physicians.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Printers.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painters.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Manufacturers.....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butchers.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bakers.....	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artist.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Actors.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyers.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Millers.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	507	2657	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		3649	2684	222	205	272	245	120	145	574	442	692	543	63	322
<i>Galveston.—H. Stuart, collector.</i>															
Quarter ending March 31	Shoemaker.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weaver.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		4	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	2	.....
Quarter ending June 30..	Baker.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Butchers.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mason.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musician.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 30 and under 35 years	Females from 30 and under 35 years	Males from 35 and under 40 years	Females from 35 and under 40 years	Males upwards of 40 years of age	Females upwards of 40 years of age	Males, age not stated	Females, age not stated	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
71	15	34	11	71	25	...	...	Germany.....	9	1	10	United States...	365	171	536	...	...
...	France.....	92	56	148	France.....	1	...	1	...	...
...	England.....	94	97	191	England.....	4	...	4	...	...
...	Ireland.....	46	38	84	Spain.....	11	9	20	...	...
...	Scotland.....	4	2	6	Mexico.....	4	...	4	...	...
...	Belgium.....	4	1	5	...	...	...	...	...	...
...	Sweden and Norway.....	3	1	4	...	...	...	...	...	...
...	Italy.....	5	...	5	...	...	...	...	...	...
...	Switzerland.....	3	...	3	...	...	...	...	...	...
...	Spain.....	36	4	40	...	...	...	...	...	...
...	West Indies.....	2	...	2	...	...	...	...	...	...
...	Mexico.....	99	2	101	...	...	...	...	...	...
...	United States...	128	48	176	...	...	...	...	...	...
71	15	34	11	71	25	...	...	...	365	173	538	...	365	173	538	...	...
...	Germany.....	1668	1478	3146	France.....	2	2	4	...	...
...	Prussia.....	553	471	1024	England.....	1	...	1	...	...
...	France.....	417	190	607	Russia.....	1	1	2	...	...
...	England.....	108	76	184	Spain.....	6	...	6	...	...
...	Ireland.....	236	241	467	Mexico.....	2	...	2	...	...
...	Scotland.....	15	5	20	United States...	3637	2681	6318	...	...
...	Belgium.....	6	4	10	Country and sex not stated.....	...	...	83	...	...
...	Denmark.....	8	1	9	...	...	...	...	...	...
...	Holland.....	6	2	8	...	...	...	...	...	...
...	Sweden and Norway.....	...	3	3	...	...	...	...	...	...
...	Russia.....	4	1	5	...	...	...	...	...	...
...	Sicily.....	2	...	2	...	...	...	...	...	...
...	Italy.....	55	9	64	...	...	...	...	...	...
...	Switzerland.....	45	42	87	...	...	...	...	...	...
...	Spain.....	102	9	111	...	...	...	...	...	...
...	West Indies.....	7	...	7	...	...	...	...	...	...
...	Mexico.....	31	2	33	...	...	...	...	...	...
...	Central America.....	1	...	1	...	...	...	...	...	...
...	United States...	567	132	699	...	...	...	...	...	...
...	Not stated.....	29	12	41	...	...	...	...	...	...
...	Country and sex not stated.....	...	...	93	...	...	...	...	...	...
417	187	256	135	578	393	...	...	...	3849	2684	6533	...	3849	2684	6533	19	13
...	Germany.....	4	...	4	United States...	4	...	4	...	...
...	4	...	4	...	4	...	4	...	...
...	Germany.....	89	61	150	United States...	89	61	150	...	...

STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 20 years.	Females from 15 and under 20 years.	Males from 20 and under 25 years.	Females from 20 and under 25 years.	Males from 25 and under 30 years.	Females from 25 and under 30 years.
<i>Galveston—Continued.</i>															
Quarter ending June 30—Continued.	Miller	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Weavers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Other	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	51	61	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		80	61	11	8	6	11	6	4	6	6	23	11	12	4
Quarters ending Sept. 30 and Dec. 31.	Merchants	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teachers	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shoemakers	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bakers	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Painters	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Tailors	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Masons	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Millers	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergymen	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated .....	.....	160	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		162	161	9	13	15	21	10	19	44	22	36	23	17	22
<i>La Salle, Texas—D. M. Stapp, collector.</i>															
Quarter ending March 31	No returns .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending June 30	No returns .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Sept. 30	No returns .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quarter ending Dec. 31..	Farmers	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Teacher	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	5	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		16	17	2	1	2	2	.....	2	3	4	4	3	.....	2
<i>San Francisco—B. F. Washington, collector.</i>															
Quarter ending Mar. 31..	Mechanics	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers	844	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Merchants	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Milliner	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergyman	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerk	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servant	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Physician	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated	14	241	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		909	242	2	1	3	6	.....	11	111	121	222	51	264	40
Quarter ending June 30..	Laborers	2800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

Males from 30 and under 35 years. Females from 30 and under 35 years. Males from 35 and under 40 years. Females from 35 and under 40 years. Males upwards of 40 years of age. Females upwards of 40 years of age. Males, age not stated. Females, age not stated.								Country to which they belong.			Country in which they mean to reside.			Males died on voyage. Females died on voyage.				
								Males.	Females.	Total.				Males.	Females.	Total.		
11	6	3	3	9	8	Germany.....	175	148	323	United States...	188	161	349	
.....	England.....	1	6	7	
.....	United States...	6	7	13	
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STATEMENT

Custom-house, with the name of the collector, and date.	Occupations.	Males.	Females.	Males under 5 years of age.	Females under 5 years of age.	Males from 5 and under 10 years.	Females from 5 and under 10 years.	Males from 10 and under 15 years.	Females from 10 and under 15 years.	Males from 15 and under 30 years.	Females from 15 and under 30 years.	Males from 30 and under 50 years.	Females from 30 and under 50 years.	Males from 50 and under 85 years.	Females from 50 and under 85 years.	Males from 85 and under 90 years.	Females from 85 and under 90 years.
<i>San Francisco—Cont'd.</i>																	
Quarter ending June 30—Continued.	Merchants.....	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	1	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clergyman.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Baker.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Artists.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	7	110	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		2894	137	3	5	2	4	1	3	427	40	822	24	1053	34		
Quarter ending Sept. 30.	Merchants.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	1961	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmers.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lawyer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Milliner.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servants.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Others.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	4	85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		1364	99	2	2	.....	1	3	4	43	18	503	39	499	22		
Quarter ending Dec. 31..	Merchants.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Miners.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Farmer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mechanics.....	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Laborers.....	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Mariners.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Engineer.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Servant.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Clerk.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Other.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Musicians.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Not stated.....	1	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
		131	31	.....	2	.....	1	3	.....	9	3	9	9	37	8		

—Continued.

Males from 30 and under 35 years.	Females from 30 and under 35 years.	Males from 35 and under 40 years.	Females from 35 and under 40 years.	Males upwards of 40 years of age.	Females upwards of 40 years of age.	Males, age not stated.	Females, age not stated.	Country to which they belong.	Males.	Females.	Total.	Country in which they mean to reside.	Males.	Females.	Total.	Males died on voyage.	Females died on voyage.
304	7	174	3	98	7	....	....	France.....	40	10	50						
								England.....	20	4	24						
								Australia.....	13	4	17						
								Germany.....	11	5	16						
								South America..	4	3	7						
								Ireland.....	3	3	6						
								Sweden.....	2	2	4						
								Scotland.....	1	1	2						
								China.....	2738	71	2809						
								Prussia.....	1	1	2						
								Italy.....	17	1	18						
								Spain.....	1	1	2						
								British America.	1	1	2						
304	7	174	3	98	7	....	....		2894	127	3021		2894	127	3021	...	...
								China.....	1295	57	1352	United States...	1364	99	1463	...	...
								England.....	16	4	20						
								Ireland.....	16	1	17						
								Scotland.....	1	1	2						
								Germany.....	23	1	24						
								France.....	43	5	48						
								Italy.....	16	1	17						
								Mexico.....	23	26	49						
								Belgium.....	1	2	3						
								British America.	1	1	2						
								South America..	....	4	4						
309	7	75	3	30	3	...	...		1364	99	1463		1364	99	1463	...	...
								Germany.....	30	8	38	United States...	131	31	162	...	...
								Scotland.....	5	5	10						
								England.....	10	6	16						
								Australia.....	13	1	14						
								Mexico.....	8	6	14						
								Italy.....	17	1	18						
								France.....	17	4	21						
								Ireland.....	7	7	14						
								South America..	4	4	8						
								Norway & Sweden	1	1	2						
								Belgium.....	1	1	2						
								China.....	18	2	20						
44	5	12	2	16	1	....	....		131	31	162		131	31	162	...	...

RECAPITULATION.

Arrivals of passengers in 1858.

Places.	Males.	Females.	Sex not stated.	Total.	Died on the voyage to—	Males.	Females.	Total.
Portland, Me.	490	188	9	687				
Panamaquoddy, Me.	367	96		465				
Portsmouth, N. H.	17	19		36				
Boston, Mass.	5,635	3,712		9,347	Boston	4	3	7
Edgartown, Mass.	27	11		38				
Fall River, Mass.	4	9		13				
New Bedford, Mass.	104	96		130				
Bristol and Warren, R. I.	3			3				
Providence, R. I.	27	31		58				
New York city, N. Y.	69,943	39,399		101,643	New York city.....	106	94	200
Oswego, N. Y.	698	204		1,092				
Detroit, Mich.	1,594	1,456		3,050	Philadelphia.....	3	1	4
Philadelphia, Pa.	1,270	1,221		2,591	Baltimore	3	3	6
Baltimore, Md.	2,101	1,985		3,986				
Newbern, N. C.	9	1		3				
Charleston, S. C.	753	271		1,024				
Key West, Fla.	428	87		695				
Mobile, Ala.	65	31		96				
New Orleans, La.	8,091	5,157	291	13,539	New Orleans.....	22	15	37
Galveston, Texas.	275	222		497				
La Salle, Texas.	16	17		33				
San Francisco, Cal.	5,296	499		5,797				
Total	89,648	54,704	300	144,652	Total.....	138	116	254

	Males.	Females.	Sex not stated.	Total.
Arrivals in the United States.....	89,648	54,704	300	144,652
Died on the voyage.....	138	116		254
Total number embarking at foreign ports for the United States during the year 1858.....	89,786	54,820	300	144,906

Country where born.

Countries.	Males.	Females.	Sex not stated.	Total.
England	9,092	5,546		14,638
Ireland.....	14,299	12,574		26,873
Scotland.....	1,134	819		1,946
Wales	189	127		316
Great Britain.....	6,798	5,258		12,056
British America.....	2,908	1,695		4,603
Portugal.....	109	68		177
Spain	1,108	174		1,282
France	2,134	1,021		3,155
Italy.....	689	200		889
Germany.....	23,901	18,390		42,291
Turkey.....	16	1		17
Sicily.....	59	35		94
Sardinia.....	167	90		257
Holland.....	198	57		255
Prussia.....	1,705	1,314		3,019
Belgium.....	118	66		184
Denmark.....	136	96		232

Country where born—Continued.

Countries.	Males.	Females.	Sex not stated.	Total.
Norway and Sweden	1,393	1,137	.....	2,430
Poland.....	6	3	.....	9
Russia.....	135	111	.....	246
Switzerland.....	653	403	.....	1,056
Mexico.....	288	143	.....	430
West Indies.....	518	129	.....	647
South America.....	89	42	.....	131
Central America.....	8	3	.....	11
China.....	4,808	230	.....	5,138
Australia.....	25	4	.....	29
East Indies.....	2	3	.....	5
Sandwich Islands.....	4	.....	.....	4
Cape Verde Islands.....	2	.....	.....	2
Madeira Islands.....	5	7	.....	12
Azores.....	193	96	.....	289
Liberia.....	2	2	.....	4
Malta.....	2	.....	.....	2
Egypt.....	2	.....	.....	2
Africa.....	6	5	.....	11
United States.....	15,962	4,618	.....	21,780
Not stated.....	92	70	300	462
Total.....	68,788	54,890	300	144,966
Born in the United States.....	15,962	4,618	.....	21,780
Aliens.....	72,894	50,002	300	123,196

Country where they mean to reside.

Countries.	Males.	Females.	Sex not stated.	Total.
United States.....	87,639	53,572	.....	140,611
England.....	230	87	.....	317
Ireland.....	11	5	.....	16
Scotland.....	41	14	.....	55
Wales.....	1	.....	.....	1
Great Britain.....	2	.....	.....	2
British America.....	1,673	835	.....	2,508
Spain.....	193	19	.....	135
France.....	96	14	.....	40
Portugal.....	6	.....	.....	6
Germany.....	16	6	.....	22
Italy.....	8	2	.....	10
Switzerland.....	3	.....	.....	3
Sardinia.....	1	.....	.....	1
Prussia.....	4	1	.....	5
Poland.....	1	.....	.....	1
Russia.....	2	1	.....	3
Holland.....	1	.....	.....	1
Norway and Sweden.....	2	1	.....	3
Turkey.....	1	1	.....	2
Denmark.....	3	2	.....	5
South America.....	12	.....	.....	12
Central America.....	1	.....	.....	1
Mexico.....	12	1	.....	13
West Indies.....	64	11	.....	75
East Indies.....	2	.....	.....	2
China.....	2	.....	.....	2
Australia.....	1	2	.....	3
Egypt.....	2	.....	.....	2
Liberia.....	3	.....	.....	3
Sandwich Islands.....	4	.....	.....	4
Cape Verde Islands.....	2	.....	.....	2
Azores.....	55	21	.....	76
Canary Islands.....	29	12	.....	41
Not stated.....	404	219	300	923
Total.....	89,788	54,890	300	144,966

Occupation.

Occupation.	Males.	Females.	Sex not stated.	Total.
Merchants.....	10,217	.....	.....	10,217
Mechanics.....	11,995	.....	.....	11,995
Mariners.....	1,109	.....	.....	1,109
Miners.....	4,254	.....	.....	4,254
Engineers.....	165	.....	.....	165
Clergymen.....	132	.....	.....	132
Farmers.....	20,506	.....	.....	20,506
Clerks.....	259	.....	.....	259
Butchers.....	38	.....	.....	38
Bakers.....	74	.....	.....	74
Physicians.....	178	.....	.....	178
Lawyers.....	113	.....	.....	113
Masons.....	68	.....	.....	68
Manufacturers.....	74	.....	.....	74
Artists.....	44	1	.....	45
Laborers.....	22,317	.....	.....	22,317
Millers.....	39	.....	.....	39
Tailors.....	156	.....	.....	156
Seamstresses and milliners.....	.....	261	.....	261
Weavers and spinners.....	40	40	.....	80
Painters.....	31	.....	.....	31
Shoemakers.....	117	.....	.....	117
Musicians.....	84	31	.....	115
Teachers.....	45	1	.....	46
Printers.....	19	.....	.....	19
Actors and actresses.....	27	6	.....	33
Hatters.....	3	.....	.....	3
Servants.....	53	1,069	.....	1,122
Other occupations.....	446	5	.....	451
Not stated.....	17,163	53,386	300	70,849
Total.....	89,786	54,830	300	144,916

Age.

Age.	Males.	Females.	Sex not stated.	Total.
Under 5 years of age.....	5,219	5,134	.....	10,353
Between 5 years of age and 10.....	4,251	3,935	.....	8,186
Between 10 years of age and 15.....	3,916	3,459	.....	7,375
Between 15 years of age and 20.....	12,296	11,036	.....	23,332
Between 20 years of age and 25.....	16,373	11,265	.....	27,638
Between 25 years of age and 30.....	17,801	7,570	.....	25,371
Between 30 years of age and 35.....	9,852	3,833	.....	13,685
Between 35 years of age and 40.....	7,652	3,943	.....	11,595
Forty years of age and upward.....	10,277	5,268	.....	15,545
Age not stated.....	149	77	300	526
Total.....	89,786	54,830	300	144,916

No. 1.

Comparative statement showing the countries in which were born passengers arriving in the United States from foreign countries during each of the last four years, namely, 1855, 1856, 1857, and 1858.

Countries.	1855.	1856.	1857.	1858.
England.....	36,671	25,904	27,804	14,638
Ireland.....	49,627	54,349	54,361	26,873
Scotland.....	5,275	3,997	4,182	1,946
Wales.....	1,176	1,126	769	316
Great Britain and Ireland.....	2,250	14,331	26,794	12,636

No. 1—Continued.

Countries.	1855.	1856.	1857.	1858.
British America.....	7,781	6,483	5,670	4,603
France.....	6,044	7,946	2,397	3,155
Spain.....	951	786	714	1,982
Portugal.....	265	198	69	177
Switzerland.....	4,433	1,780	2,080	1,056
Italy.....	1,094	969	638	889
Sicily.....	23	23	32	94
Sardinia.....	5	380	343	257
Turkey.....	9	5	11	17
Greece.....		9	4	
Malta.....				2
Holland.....	2,598	1,395	1,775	185
Denmark.....	598	173	1,035	932
Prussia.....	5,699	7,221	7,983	3,019
Belgium.....	1,506	1,992	637	184
Russia.....	13	9	25	246
Germany.....	66,219	63,807	63,798	42,291
Poland.....	462	20	194	9
Iceland.....			10	
Norway and Sweden.....	821	1,157	1,712	2,430
South America.....	191	184	83	131
Central America.....	1	303	2	11
West Indies.....	887	1,337	993	647
Mexico.....	490	741	133	489
China.....	3,586	4,733	5,944	5,196
East Indies.....	6	13	1	5
Australia.....	4	7	6	32
Asia.....	8	1		
Society Islands.....	1			
Sandwich Islands.....	7	2	5	4
Azores.....	175	358	607	280
Madeira Islands.....	1		69	12
St. Helena.....	1			
Egypt.....		1		2
Liberia.....			2	4
Africa.....	14	5	23	11
New Zealand.....		1	1	
Cape Verde Islands.....		2	3	2
United States.....	20,599	24,060	20,676	21,780
Not stated.....	145	172	21,600	462
Total.....	230,476	224,496	271,982	144,906

No. 2.

Comparative statement showing the occupation of passengers arriving in the United States from foreign countries during each of the last four years, namely, 1855, 1856, 1857, 1858.

Occupation.	1855.	1856.	1857.	1858.
Merchants.....	14,759	11,105	12,114	10,217
Mechanics.....	14,997	9,801	18,074	11,986
Mariners.....	1,156	906	990	1,109
Miners.....	920	6,136	5,680	4,354
Farmers.....	34,693	24,729	34,702	20,506
Laborers.....	42,889	37,019	43,949	22,217
Lawyers.....	224	90	78	113
Physicians.....	247	163	147	176
Clergymen.....	149	118	173	122
Servants—males.....	62	42	60	53
Servants—females.....	2,536	1,706	1,922	1,069
Other occupations—males.....	1,496	1,367	1,359	1,729
Other occupations—females.....	345	1,946	297	245
Not stated—males.....	29,586	43,809	46,161	17,181
Not stated—females.....	67,402	66,236	107,536	53,266
Not stated—sex not stated.....	12			300
Total.....	230,476	224,496	271,982	144,906

No. 3.

Comparative statement showing the age of passengers arriving in the United States from foreign countries during each of the last four years, namely, 1855, 1856, 1857, and 1858.

Age.	1855.	1856.	1857.	1858.
Under 5 years of age.....	19,336	16,369	91,946	10,333
Between 5 years of age and 10.....	18,033	14,405	16,156	8,166
Between 10 years of age and 15.....	15,076	11,908	13,142	7,785
Between 15 years of age and 20.....	37,310	34,618	48,565	22,333
Between 20 years of age and 25.....	30,567	40,627	52,994	29,536
Between 25 years of age and 30.....	34,686	32,609	40,935	25,371
Between 30 years of age and 35.....	21,708	19,131	20,630	13,785
Between 35 years of age and 40.....	18,067	14,541	16,509	10,885
Forty years of age and upwards.....	25,155	19,905	22,908	15,545
Age not stated.....	636	*19,673	21,533	536
Total.....	230,476	224,496	271,988	144,906

* Of this number 7,813 were under 21 years of age, and 10,945 were above 21 years of age.

No. 4.

Statement of the number of passengers arriving in the United States by sea from foreign countries from September 30, 1843, to December 31, 1858.

Years.	Males.	Females.	Sex not stated.	Total.
From September 30, 1843, to September 30, 1844.....	48,697	35,667	.....	84,764
Do.....1844.....do.....1845.....	69,179	49,311	1,406	119,896
Do.....1845.....do.....1846.....	90,974	66,778	697	158,649
Do.....1846.....do.....1847.....	130,167	90,325	990	220,482
Do.....1847.....do.....1848.....	135,198	92,683	473	228,354
Do.....1848.....do.....1849.....	179,956	119,915	512	299,383
Do.....1849.....do.....1850.....	200,904	112,392	1,038	313,334
Do.....1850.....do.....1851.....	38,968	27,107	181	66,256
From December 31, 1850.....do.....1851.....	245,017	162,745	66	407,828
Do.....1851.....do.....1852.....	235,731	160,174	1,438	397,343
Do.....1852.....do.....1853.....	236,732	164,178	79	400,990
Do.....1853.....do.....1854.....	264,687	175,567	.....	440,254
Do.....1854.....do.....1855.....	140,181	90,969	19	231,169
Do.....1855.....do.....1856.....	135,308	89,188	.....	224,496
Do.....1856.....do.....1857.....	162,538	109,030	.....	271,568
Do.....1857.....do.....1858.....	69,648	54,704	300	124,652
Total.....	2,432,899	1,611,457	7,384	4,051,670

REPORT
OF
THE SECRETARY OF WAR.

COMMUNICATING,

In compliance with a resolution of the Senate, information as to what changes have been proposed in the armament of the United States mounted troops, with a view to economy and increased efficiency of that force on the frontiers; an estimate of the additional expense, if any, and the means provided, or necessary to be provided, for the same.

FEBRUARY 21, 1859.—Referred to the Committee on Military Affairs and the Militia, and ordered to be printed.

WAR DEPARTMENT, *February 21, 1859.*

SIR: I have received the resolution of the Senate of the 19th instant, asking to be furnished with "information as to what changes have been proposed in the armament of the United States mounted troops, with a view to economy and increased efficiency of that force on the frontiers; an estimate of the additional expense, if any, and the means provided, or necessary to be provided, for paying the same."

In reply, I have the honor to state that the subject has had the serious consideration of this department, and was, some time since, referred to a board, consisting of some of the most distinguished officers in the mounted service, for their views as to the most practicable mode of increasing the efficiency of the mounted troops in that respect. A copy of their report is herewith transmitted. I have further to say that there are no means provided for paying the additional expense, and to enclose a copy of an estimate of the amount necessary, which, in January last, I communicated to the chairman of the Committee of Ways and Means of the House of Representatives.

I have the honor to be, very respectfully, your obedient servant,

JOHN B. FLOYD,
Secretary of War.

Hon. J. C. BRECKINRIDGE,
President of the Senate.

*Proceedings of a board of officers convened at Washington Arsenal, D. C.,
by virtue of the following orders :*

SPECIAL ORDERS, No. 23.

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, February 16, 1858.

A board of officers, to consist of Brevet Brigadier General W. S. Harney, colonel 2d dragoons; Lieutenant Colonel J. E. Johnston, 1st cavalry; Major W. H. Bell, ordnance department; Brevet Colonel C. A. May, major 2d dragoons; Brevet Lieutenant Colonel W. J. Hardee, major 2d cavalry, will assemble at the Washington arsenal, at 11 o'clock a. m., on Thursday, the 18th instant, or as soon thereafter as practicable, for the examination of Colt's arms with breech attachment and pistol carbine. The board will make a detailed and minute report, and give an opinion as to the fitness of these weapons for our cavalry service. Captain T. J. Wood, 1st cavalry, is appointed recorder of the board.

By order of the Secretary of War.

S. COOPER, *Adjutant General.*

SPECIAL ORDERS, No. 24.

WAR DEPARTMENT, ADJUTANT GENERAL'S OFFICE,
Washington, February 17, 1858.

Brevet Lieutenant Colonel W. J. Hardee, major 2d cavalry, is relieved from serving on the board of officers instituted by "Special Orders, No. 23," of February 16, 1858, from the War Department, and Captain T. J. Wood, 1st cavalry, is detailed as a member of the same.

Captain Wood will report the proceeding of the board.

By order of the Secretary of War.

S. COOPER, *Adjutant General.*

The board met pursuant to the foregoing orders. Present, all the members.

The board examined three specimens of Colt's pistol carbine, of the following length of barrel, respectively: twelve, fifteen, and eighteen inches, and Colts' pistol, with a barrel seven inches long, with breech attachment.

To test the accuracy of fire, a number of shots was fired from all these arms at the following ranges: at one hundred yards, and at three hundred yards; at five hundred yards from the three specimens of the pistol carbine, and at two hundred yards from the pistol with breech attachment.

The result of these experiments was entirely satisfactory to the board, as to the accuracy of fire of the arms under examination.

To test the penetration of these arms a target of white pine boards, seasoned, one inch thick, with an interval of one inch and a quarter between the boards, and two feet by two in size, was used. The shots were fired at thirty yards from the target.

The carbine with 12-inch barrel penetrated 9 boards.

The carbine with 15-inch barrel penetrated 8½ boards.

The carbine with 18-inch barrel penetrated 9 boards.

The pistol with breech attachment penetrated 7½ boards.

The board consider Colt's pistol carbine and Colt's pistol with breech attachment superior for our cavalry service to any arm with which they are acquainted.

The board recommend the adoption of Colt's pistol (with breech attachment) and ammunition for the cavalry service, and that each trooper be furnished with two pistols, adjusted to the same breech, the barrel of each pistol to be eight inches long, of the calibre of the army revolver.

The board recommend that steel or malleable iron be substituted for the brass in the connexion of the breech attachment with the pistol.

The board recommend that the two swivels on the breech attachment and the swivel on the pistol be dispensed with; also recommend that the pistol be sighted for one, two, and three hundred yards.

The board recommend that one pistol be worn on the right side of the soldier, in a pouch attached to the sabre belt, and the other in the holster on the right side of the saddle, and that the breech attachment be carried in a suitable pouch attached to the left side of the rear of the saddle.

The board adjourned to meet at 1 o'clock p. m., February 19, 1858.

FRIDAY, *February* 19, 1858.

The board met pursuant to adjournment. Present, all the members.

The board recommend that, as Colt's pistols with barrels eight inches long cannot be procured in time for the operations of the approaching campaign, pistols with seven-inch barrels and the breech attachment be furnished for immediate use.

Having no further business to transact, the board adjourned *sine die*.

WM. S. HARNEY,
Colonel 2d Dragoons and Bvt. Brig. Gen., President.
THOMAS J. WOOD,
1st Cavalry, Recorder.

Estimate prepared, in accordance with instructions from the Secretary of War, of funds that will be required to procure pistol carbines for all the mounted regiments, viz:

Five regiments, 1,700 pistols each, 8,500 pistols, at \$51 36 per pair.....	\$218,280
Add one-fifth for loss and damage sustained in service.....	43,656
One hundred rounds of ammunition for each man, viz: 425,000 rounds of ammunition, at \$20 per thousand.....	8,500
	<hr/>
	270,436
	<hr/>

H. K. ORAIG,
Colonel of Ordnance.

ORDNANCE OFFICE, *November 19, 1858.*

WAR DEPARTMENT, *January 25, 1859.*

SIR: I have the honor to transmit herewith, for the consideration and action of your committee, an estimate for arms for the use of the mounted regiments, which was received too late to accompany the annual estimates from this department.

Very respectfully, your obedient servant,

JOHN B. FLOYD,
Secretary of War.

Hon. JOHN S. PHELPS,
*Chairman Committee of Ways and Means,
House of Representatives.*

REPORT
OF THE
SECRETARY OF THE INTERIOR,
COMMUNICATING

*Reports upon the Pacific Wagon Roads constructed under the direction
of that Department.*

FEBRUARY 24, 1859.—Read and ordered to lie on the table; motion to print referred to the Committee on Printing.

FEBRUARY 26, 1859.—Report in favor of printing the reports and maps submitted, considered, and agreed to

DEPARTMENT OF THE INTERIOR,
February 23, 1859.

SIR: I have the honor to transmit herewith reports, with maps, upon the several wagon roads constructed under the direction of the department, under the provisions of the acts of Congress approved July 22, 1856, February 17 and March 3, 1857, respectively.

I am, sir, respectfully, your obedient servant,

J. THOMPSON, *Secretary.*

Hon. JOHN C. BRECKINRIDGE,

President of the Senate.

REPORT

UPON

THE PACIFIC WAGON ROADS,

CONSTRUCTED

Under the direction of the Hon. Jacob Thompson, Secretary of the Interior, in 1857-'58-'59.

BY ALBERT H. CAMPBELL, *General Superintendent, &c.*

DEPARTMENT OF THE INTERIOR,
Pacific Wagon Road Office, February 19, 1859.

SIR: I have the honor to submit the following brief report upon the operations of the several wagon road expeditions organized under the provisions of the acts of Congress approved July 22, 1856, February 17, 1857, and March 3, 1857, respectively, the general management of which you have entrusted to me.

FORT RIDGELEY AND SOUTH PASS ROAD.

On the 25th of April, 1857, new instructions were issued to Mr. William H. Nobles, who was continued as superintendent of the Fort Ridgeley and South Pass road. These instructions were substantially the same as those given him by the Commissioner of Indian Affairs, September 18, 1856, in reference to the character of the road to be constructed.

On receipt of these instructions Mr. Nobles proceeded to St. Paul to perfect his organization, from which place he reported on the 15th of May that he had purchased a portion of his outfit, and could start about the 26th, but that he should be delayed in his departure from that place one or two weeks, in consequence of the unusually severe and backward season, preventing the growth of grass. On the 19th of June Mr. Nobles left St. Paul, his party starting the two days previous for Fort Ridgeley, to prosecute the work assigned him, the provisions having been sent forward nearly a month previous by steamboat up the Minnesota river to the point of rendezvous. A despatch dated July 14, Big Sioux river, announcing his arrival and the progress of the work to that place, and expressing his apprehension in regard to Indians retarding his further progress, was received on the

8th of August at the department, two days after the receipt of a more detailed account, dated St. Paul, Minnesota Territory, July 30, announcing his arrival in St. Paul two days previous for ammunition, and giving an account of the opposition of the Ihankton Indians to his progress through their country. This opposition to passing through their country Mr. Nobles says arose from "no particular enmity to his progress through their country, provided they were compensated for the right of way."

On the 25th of September Mr. Nobles writes from St. Paul, Minnesota Territory, announcing his return to that place, having left his party on the 18th of that month on the Big Sioux, engaged in completing a portion of the road in that vicinity. In this letter Mr. Nobles expressed his great pleasure in informing the department of the entire success of his expedition, and reports a road "from the Big Sioux river to the Missouri, over which any team can pass, and through a country inviting to the emigrant."

This road was completed only as far as the Missouri river, 254 miles, some time in the fall of 1857, in consequence of the insufficiency of the appropriation and of alleged Indian hostilities. The general location of this road is as follows: beginning at the ferry on the Minnesota river, which is 150 feet wide at this place, opposite Fort Ridgely, the general course of the road is southwesterly, passing through a marshy region a few miles south of Limping Devil's Lake to the north fork of the Cottonwood, a distance of about 17 miles, thence to the Cottonwood river, over a rolling country, with lakes and marshes, about $1\frac{1}{2}$ mile below the mouth of Plum creek, distance about 19 miles. From this point the road continues across Plum creek and three good watering places to the crossing of Cottonwood at Big Wood, about $18\frac{1}{2}$ miles. Thence the road continues to Hole-in-the-Mountain, near Lake Benton, a distance of about 32 miles, passing through a region abounding in lakes and an abundance of wood, water, and grass. From Lake Benton the road passes for the most part over a high prairie to the Big Sioux river, about $23\frac{1}{2}$ miles. From the Big Sioux to James river, about $62\frac{1}{2}$ miles, "is a vast sandy prairie, with no timber whatever." This timberless prairie extends to the Coteau du Missouri, 23 miles from James river. From Coteau du Missouri to the Missouri river, distance about 60 miles, the country is represented as being gently undulating until the tributaries of the Missouri are reached, it then becomes more broken. The longest distance on this entire road between water is 19 miles, and this occurs between the edge of the Coteau and Crow creek.

This road, as far as built, is remarkably direct, and is believed, from the description of the country through which it passes, to be the best location which could have been made, securing a plentiful supply of water, grass, and timber.

The report of the superintendent, and the very able and interesting report and map of Samuel A. Medary, engineer, herewith transmitted, will give a detailed account of the operations on this road, as well as a description of the country passed over.

PORT KEARNEY, SOUTH PASS, AND HONEY LAKE ROAD.

Eastern division.

This road being about 1,400 miles in length, for the sake of economy and convenience of construction was divided into three divisions, viz: the first extending from Fort Kearney to Independence Rock; the second from Independence Rock to City Rocks; and the third from the City Rocks to the eastern boundary of California, near Honey Lake valley. The plan of operations adopted to secure the rapid construction of this road, was as follows: The superintendent of the Fort Ridgeley and South Pass road was instructed to return after completing his operations on that road from Independence Rock to Fort Kearney, improving so much of this road as required it; the particular points to which the attention of the department had been called as needing material improvement were Scott's Bluffs, Ash Hollow and Plum Creek. This portion of his instructions, however, were not complied with for reasons previously assigned.

The superintendent of the eastern and middle divisions, Mr. Wm. M. F. Magraw, to whom instructions were handed on May 1, 1857, was directed to repair as rapidly as possible over the first division, improving so much of the road only as would facilitate the movements of his own train, and commence at Independence Rock and improve the present road from that point to near the summit of the South Pass, and thence to City Rocks, to open a new road to avoid the detour *via* Salt Lake City and by Bear river, &c. It had been suggested that a good route for a wagon road exists from the summit of the South Pass running near the base of the Wind River mountains; thence in a direct line to Beer or Soda Springs on Bear river, crossing Green river near the New Forks; thence from Beer Springs *via* Thousand Spring valley, north of the Humboldt, to the Mud lakes.* To test the practicability of a portion of this route, which promised so much in point of distance, and affording better grass and a greater and more permanent supply of water than the present travelled roads, besides avoiding the Green River deserts and at the same time offering superior advantages to the Oregon emigrant, as a glance at the map will show, the superintendent was empowered to send a party in advance in charge of F. W. Lander, his chief engineer, who had been selected by the department for his eminent qualifications for that service, having crossed the continent a few years ago *via* the South Pass, exploring for a practicable route for a railroad from the Mississippi river to the Pacific coast. Mr. Lander was instructed to thoroughly examine the Bear River mountains "between the trail *via* Ham's Fork and the head waters of Port Neuf or some other tributary of Snake river, and from such a point as he might discover in these mountains to City Rocks."

The advance party, under the chief engineer, left the frontier on the 15th of June, 1857, and reached the South Pass on the 15th of July.

* In a letter of W. H. Nobles to the Secretary of the Interior, March 26, 1857.

His party was divided into three divisions, for the thorough exploration of the Wasatch mountains and the upper basin of Green river. These explorations were accomplished with remarkable energy, and having accomplished them to his satisfaction, proceeded to the South Pass to meet the superintendent, which he did on the 22d of September, having travelled with his several small parties several thousand miles. A report and map of these explorations were furnished the superintendent, and the latter subsequently passed into the hands of the commander of the army of Utah, and is said to have been of material service to that officer.

The superintendent and his party left Independence about the 1st July, 1857, and reached the head waters of the Sweetwater in the latter part of September of the same year, too late to proceed with safety through the South Pass and into the Wasatch range, in consequence of the severity of the winter in that region and the hostile attitude of the inhabitants of Utah toward the authorities of the United States at this time. The superintendent was compelled therefore to seek suitable winter quarters, which he did on Popo Agie, a tributary of Wind river. Here the party was disorganized, a portion of the employés returned to the frontier, a portion accompanied the chief engineer to this city to report upon the operations of his advance corps, a small force was left on Popo Agie in charge of the public property, and a large number volunteered into the service of the army of Utah, selecting their superintendent as their captain; their services were accepted by the proper officer in command, and a large portion of the mules, and wagons, and other property of the expedition was turned over to him for the use of the army.

The accompanying report of the chief engineer of the results of his explorations west of the South Pass is herewith submitted.

The superintendent having vacated his commission, by volunteering into the service of the army of Utah, the chief engineer, Mr. F. W. Lander, was appointed to the superintendency of this road, and received instructions to carry out in the main the instructions originally given to his predecessor. His party left the frontier about the 1st of May last, and, being equipped for rapid movement, reached the South Pass, the point of beginning their operations, 950 miles from the starting point, on the 14th of June following. Immediately on the arrival of this party at the South Pass, preparations were made by Mr. Lander for the location and construction of the road. Having secured the services of sufficient number of laborers, many of them Mormons from Salt Lake City, a vigorous prosecution of the work was commenced. Mr. Lander was instructed to open a road from the South Pass of the Rocky mountains to the City Rocks, or north fork of the Humboldt river, *via* Thompson's or McDougal's Passes; that is to say, along what is designated in his report of November 30, 1857, and on the map* accompanying it, as the "Northern Route." From the very extensive explorations of Mr. Lander in the summer of 1857, developing several practicable routes for roads through a region of

* This map has been replaced by a map accompanying Mr. Lander's report of January 20, 1859.

country abounding in nutritious grasses, permanent supplies of water, and timber for fuel and for building purposes, it was deemed important to open this route, in view of the large emigration which annually passes overland to the Pacific shores, and in view also of the unsettled condition of affairs in the vicinity of Salt Lake City at the time. The road, as now located, will, it is believed, be of incalculable advantage to the Oregon and California emigration, particularly to that portion of it which contemplates making the entire march from the Mississippi valley to California, or to the settlements of Oregon, in one season. The overland emigration reaches the vicinity of the South Pass toward the end of July, and by adopting the route now open to them they will avoid the artemisia barrens of the Green River basin, with its deleterious waters, and the rugged defiles of the Wasatch mountains, leading to Salt Lake City, and the circuitous route by the valley of Bear river. "The passage of the line, as located nearer to the base of the snow-capped mountains in a more elevated region, richly grassed, and along the great summer trails of the Indians, is favorable to their health, the preservation of their stock, and gives them abundance of pasturage, with water at short intervals from mountain streams."

The direct road from the South Pass to Bear or Soda Springs, on Bear river, which had been suggested, as above referred to, as feasible and of easy construction, it will be seen by Mr. Lander's report and map, is in part impracticable. The Wasatch and Bear River mountains, between Thompson's Pass and the mouth of Tulick's fork of Bear river, are represented as being very rugged and covered with dense pine forests, requiring expensive grading and extensive cutting through pine timber.

The location of this road, as constructed by Mr. Lander, is as follows: Beginning at Gilbert's trading station, in the South Pass, it passes along the base of the Wind River mountains, heading Little and Big Sandy creeks; thence west, across the Green River basin, crossing the New Fork, Green River, and White Clay and Bitter-root creeks to the valley of Piney creek; thence up this valley through Thompson's Pass to the headwaters of Labarge creek; thence, *via* the head of Smith's fork of Bear river to the valley of Salt river. The road continues down this fertile valley about twenty-one miles to Smoking creek; thence up the valley of this creek to the head of Blackfoot creek, and the valley of John Gray's lake to Blackfoot creek, lower down; thence over to Ross creek. Passing several miles down this creek the road crosses over to Snake river or Lewis' fork of the Columbia, near the mouth of Pannock river; thence down the valley of Snake river to the valley of Raft river; thence up this valley direct to City Rocks; a total distance of 345.54 miles from Gilbert station at the South Pass, and 950.54 miles from Fort Kearney. From City Rocks to Honey Lake valley, by the survey of Superintendent Kirk, is 436.93 miles. The total length, therefore, of this entire road is 1,387.47 miles.

From a tabular statement in Mr. Lander's report it will be seen that over sixty-two thousand cubic yards of earth and rock have been removed, eleven miles of willow, and twenty-three miles of heavy pine timber cleared from the roadway.

Mr. Lander represents the agricultural and pastoral resources of the country traversed by this road as highly favorable. The western base of the Wind River mountains and the upper basin of Green river afford fine pasturage, and many valleys are adapted for settlements. On the headwaters of Snake and Blackfoot rivers, large crops of wheat and barley have been raised. All the great tributaries of Upper Green river have their sources in the Wind River and Wasatch mountains, and are well timbered with yellow pine. The tributaries of the upper Snake river are also heavily timbered. The Mormons have extended their settlement a considerable distance into the region of country through which this road passes, and should it come to be a thoroughfare it will doubtless be thickly populated.

In connexion with his report, Mr. Lander presents an interesting account of his intercourse with the Indian tribes, through whose range this road passes. He speaks of the Shoshonees particularly, as being friendly disposed toward the whites, and makes several suggestions with regard to maintaining this friendly feeling toward this and other tribes, to which I would respectfully call your attention. The Snakes have received very little attention hitherto from the authorities of the United States, and frequent wars with their powerful neighbors, the Blackfeet and Crows, have compelled them in a manner to withdraw from the buffalo range and keep within the mountain fastnesses, where they derive a scanty subsistence from roots and the smaller game. The effect of opening an emigrant road through this country will be disastrous to their means of subsistence, by destroying their root grounds and driving away their game, and expose them also to the wanton annoyance of a class of emigrants, who never avoid an opportunity of attacking small bands of Indians whenever they are met with. This inevitable result, Mr. Lander very justly argues, will provoke their hostility and involve the government in an expensive war. By the judicious distribution of a few thousand dollars worth of suitable goods and implements among them, with encouragement to preserve peaceful relations with the whites, and devote their energies to developing the resources of the country, by the production of grain and vegetables, and other articles suited to the wants of emigrants, this interesting people may be gradually brought to the knowledge and practice of the arts of civilization. Without some such provision being made, Mr. Lander states that a much larger force will be necessary to continue operations in that country than would otherwise be required.

Western Division.

The western division of this road extends from City Rocks to the California line at Honey Lake valley.

The superintendent of this division, Mr. John Kirk, was instructed to organize his force at Placerville, California, and select a road from Honey Lake valley to City Rocks, avoiding as much as possible the Humboldt, St. Mary's, or Ogden's river, leaving it to the south. The alleged deleterious character of the waters of this river, and its destructive effects upon cattle and horses, renders it advisable to avoid it as

much as possible. Instructions were handed Mr. Kirk on May 1, 1857. On the fifth he embarked for California, where he arrived on the thirtieth. He organized a party, and started, *via* Carson's valley, for Honey Lake valley, the point of beginning, on the 27th of June; reached City Rocks, the eastern terminus of his division, about the 1st of September, 1857, and returned thence to Placerville, where his party was disbanded. His report and map will be found accompanying, and will give the details and results of his operations.

Mr. Kirk and his engineer, Mr. Bishop, both agree that the only route for a wagon road between City Rocks and the Great Bend of the Humboldt river is in the valley of this river. The distance from Honey Lake valley to City Rocks, by the route surveyed by Mr. Bishop, is 436.93 miles.

EL PASO AND FORT YUMA ROAD.

Instructions were issued to James B. Leach, the superintendent of this road, on May 9, 1857. He was directed to proceed to Memphis, Tennessee, to organize a partial force and travel by as direct a line as possible from that place to opposite El Paso, on the Rio Grande, the initial point of his operations. From Memphis to the Rio Grande he was instructed to collect such information and make such surveys as the progress of his march would admit of, with reference to the character of the country and its capabilities for maintaining a good wagon road.

With the supplies, instruments, and tools for the expedition, this party left the west bank of the Mississippi river, opposite the city of Memphis, Tennessee, on July 1, 1857, and arrived at Des Arc, on White river, in Arkansas, on the 8th, (97.1 miles from Memphis.) Here the wagons were reloaded, a portion of the freight being left to be conveyed by the ox train, which was expected to follow the mule or advance train very soon. The mule train left Des Arc on the 17th of July, crossed the Arkansas river at Little Rock, (148.6 miles from Memphis,) on the 19th, reached Doaksville, in the Choctaw country, (380 miles,) on the 13th of August. The recent and long continued rains rendered the roads generally heavy, and in many places almost impassable, consequently much time was lost and labor required in getting the train over this portion of the route. Leaving Doaksville on the 17th of August the train crossed Red river at Preston, (472 miles,) on the 22d reached Fort Belknap and the Brazos river, (635.4 miles,) on the 1st September, passed old Fort Phantom Hill, (709 miles,) on the 8th, Fort Chadbourne, (767 miles,) on the 12th, the Mustang Ponds, (915 miles,) on the 27th, and reached the Pecos river, at the "Horsehead" crossing, (961 miles,) on the 29th. Left the west bank of the Pecos October 1st, passed Comanche Springs, on road from San Antonio to El Paso, (1,027 miles,) on the 5th, Fort Davis, (1,100 miles,) on the 8th, Rio Grande, (1,225 miles,) on the 16th, and arrived at Franklin, opposite El Paso, (1,309½ miles from Memphis,) on the 22d of October.

Franklin being the eastern terminus and initial point of the road to be constructed, three parties were immediately organized and the

construction of the road commenced, which was continued without intermission or suspension, except the necessary delay in the movement of the working parties along the route, from October 25, 1857, to August 1, 1858, at which time the advanced state of the work authorized a reduction of the laborers employed, and rendered unnecessary a large portion of the outfit, embracing mules, oxen, wagons, tools, &c., which were sold at public auction, in La Mesilla, on the 1st of August. With the reduced force, the superintendent and chief engineer again passed over the road from La Mesilla to Fort Yuma, to make additional improvements, as well as to secure and render more certain an abundant supply of permanent water, reached Fort Yuma about October 1, proceeded to San Diego, sold the property and disbanded the party on October 16, 1858, and leaving California on the 20th November reached Washington on December 10, 1858.

Location of the road.—Beginning at Franklin (opposite El Paso) the road proceeds up the valley on the east side of the Rio Grande, touching the river at convenient points for water, crosses it near La Mesilla and continues up the valley, on the west side, to the Picacho, (51.5 miles from Franklin;) thence, turning westwardly, ascends the Mesa and passes over a gently undulating prairie to Cook's Spring, (101.4 miles;) thence through the favorable pass in the Mimbres mountains, crossing the Rio Mimbres directly to Ojo de la Vacca, (134.5 miles,) passing the southern edge of the Burro range of mountains to Ojo Excavado, (147.6 miles,) through the Peloncillo pass, (187.7 miles,) crossing the Rio de Sauz (201.7 miles) directly to Parke's railroad pass, (between the Chericahui and Pineleña mountains, 231 miles,) to Croton Springs, (248.7 miles;) thence through Nugent's pass, in the San Calisto range, to the Rio San Pedro, (271.5 miles,) down the valley, on the east side of the river, to the junction of the Rio Aravaypa, (328.1 miles, and 15 miles from the Rio Gila;) then crossing the Rio San Pedro the road continues, by a very favorable pass in the Santa Catarina range, directly to and striking the Gila (375.2) 21 miles east of the Pimos villages; thence by the Maricopa Wells down the valley, on the south side of the Rio Gila, to Fort Yuma, the western terminal point of the road, (573.1 miles from Franklin,) making the new road about 40 miles less in length than the old travelled road *via* the Puerto del Dado or Apaché Pass, Tucson, &c.

Construction of the road, character of work, &c.—The excavation, owing to the generally smooth or gently undulating surface of the prairies and valleys, and very favorable mountain passes of the country traversed by the road, was not very heavy or expensive, but confined chiefly to "side cutting," in making the road around the rocky hills and bluffs in the vicinity of Franklin, at the Picacho, (opposite Doña Ana,) in ascending the Mesa, from the valley of the Rio Grande and along the valleys of the San Pedro and Gila rivers, turning the points of mesas and rocky bluffs, or keeping the roadway above the wet and marshy bottoms; also, wherever it was required, to make easier the crossings of the arroyos and streams, or more gentle and gradual the ascents and descents of the mountain passes.

The road-bed was cleared of boulders and loose or detached rock, as

well as brush, throughout its entire length, requiring much time and labor, especially in the valleys of the San Pedro and Gila rivers. All the springs and permanent watering places were improved and made easy of access, and the supply of water rendered ample to meet the demands of the stage and emigrant trains at all seasons. Where permanent water was not found at suitable points, reservoirs were constructed, either by damming the arroyos or sinking large tanks to collect and retain a supply of rain water.

The tabular statement of the localities of the most convenient watering points, with the required facilities for camp purposes, shows how abundantly the country along the road supplies the great desiderata of travellers across the plains, wood, water, and grass. The soil, generally a mixture of coarse sand, clay, and gravel, is very favorable to the formation of a good and durable road-bed, which a little use will render hard, compact, and smooth.

The gradients and curvature of the road are comparatively light and offer no obstruction to the rapid transit of vehicles of any description. The crossing of the Rio Grande is effected with much trouble and difficulty by fording at low stages of water, owing to the quicksand in the channel, and at high water the rapidity of the current makes the ferrying tedious and dangerous. The Mimbres and San Pedro are small streams and are readily forded at all seasons; the Colorado is crossed by ferry.

In reviewing the improvements effected by this line of location, and the labor executed upon it, it will be found that there is a saving of distance between the termini of $47\frac{1}{16}$ miles; an increase of over seventy (70) miles along running water; a reduction of the greatest distance between camps to 27 miles by the construction and improvement of six new watering places; and the reduction of all gradients to a slope easily passed over by loaded wagons drawing a maximum load, which, for six mules, is 4,000 pounds, and for ten mules, 6,000 pounds; and the opening to settlers and emigrants of the valleys of the San Pedro and Gila rivers.

The effect of these improvements amounts to a saving in time, with loaded wagons, of about five (5) travelling days between El Paso and Fort Yuma.

The able and interesting report of Mr. N. H. Hutton, who was selected as the engineer of this road on account of his familiarity with the country through which it passes, will give a more detailed account of the results of the operations upon this work, from which it will be seen that over fifty-seven thousand cubic yards of earth and rock have been removed, and an increase in watering facilities of over three hundred thousand gallons afforded.

NEBRASKA ROAD.

Instructions were sent to George L. Sites, the superintendent of this road, at Fort Wayne, Indiana, May 19, 1857, with directions to proceed at once to the Platte river, and, with his engineer, make a rapid reconnaissance of the whole route, with a view to a judicious and economical expenditure of the sum appropriated throughout the entire distance. Two reports, which are herewith submitted, dated respect-

ively July 10th and August 10th, were received from Superintendent Sites; the first comprising the results of his examinations between the Platte river and Dacota City, and the second his operations between the latter place and the l'Eau qui Court, (Running Water river.) Mr. Sites, in these reports, and in a subsequent report dated March 4, 1858, expresses the opinion that a good road could and would be built by him, including several important bridges, with the appropriation.

This road was commenced in June, 1857, and was located up the valley of the Pappillion, *via* Bellevue, thence to Omaha City, and from this place to Saratoga, and thence through Florence over the "second bottom lands" of the Missouri, crossing Spring and Mill creeks, to the bluffs of the Missouri, five miles from the bridge erected on the military road from Omaha City to Fort Kearney; crossing here a high ridge, the road passes down the valley of Poncas creek for one mile, and thence over to the valley of Deer creek; thence over to the second bottom lands of the Missouri, crossing Turkey creek, to the town of Fort Calhoun. From Fort Calhoun the road continues along the bottom lands of the Missouri, crossing Moore, Mill, and Glover creeks to Desota. From this point the road passes over the highlands and across the bottom lands to Cumming City, and thence to Tekama, crossing North, Stewart's, New York, Pike Spring, and Dry creeks. From Tekama the road bears to the west of north crossing Silver and Elm creeks, and reaches Decatur City. From Decatur City the road passes through the Blackland hills to the town of Omadi, and thence to Dacota City—105 miles from the Platte river. From Dacota to Niobrara, at the mouth of the Running Water river, (l'Eau qui Court,) the distance is 100 miles; and from the Platte to Niobrara, the terminus of the road, 205 miles. The entire country passed over by this road is represented to be rich, and well adapted to agricultural and pastoral pursuits. The accompanying reports and map of the superintendent will afford a more detailed statement of this road, which was completed so far as Dacota City before the close of the year 1857. The superintendent was instructed early last spring to resume his operations, with a view to the completion of the road from Dacota to Niobrara.

The final report of Mr. Sites, dated January 20, 1859, herewith submitted, gives a general resumé of his operations to the close of the work; by reference to which it will be seen that he has constructed fifty-one bridges, of various sizes, ranging from seven to seventy-eight feet in length, besides excavation and other work necessary to render the road passable and of a permanent character.

This road having been judiciously located by Mr. Sites, appears to have given great satisfaction to the people of Nebraska; and it is believed that it will assist greatly in developing the resources of that region by affording a ready means of communication between the various settlements along its course.

I am, sir, very respectfully, your obedient servant,

ALBERT H. CAMPBELL,

General Superintendent Pacific Wagon Roads.

Hon. JACOB THOMPSON,

Secretary of the Interior.

Report of Superintendent William H. Nobles upon the Fort Ridgeley and South Pass Wagon Road, constructed under the direction of the Department of the Interior, 1856-'57-'58.

WASHINGTON, D. C., January 18, 1858.

SIR: I have the honor herewith to transmit my report, with accompanying map of the route; also a journal of daily operations and engineer's report, being a full statement of the operations of the expedition under my charge for the purpose of building a wagon road from Fort Ridgeley to the South Pass of the Rocky mountains, as provided for by acts of Congress.

The late date of the starting of the expedition from St. Paul, owing to the absence of funds to pay for the necessary outfit, prevented my completing my portion of the road this season further than the Missouri river.

I have to report that I have located and built a good wagon road from Fort Ridgeley to the Missouri river, in lat. $43^{\circ} 47'$, between Bijou hill and Fort "Lookout."

The road has been selected and made with a view to accommodate the emigrant, by having it pass through a good country and in the vicinity of wood and water; and also, with these valuable considerations always in sight, I have been able to complete the road in almost a direct line from Fort Ridgeley to the terminus on the Missouri river.

The topography of the country is principally of a level prairie character, and presents but few serious obstacle to the traveller, and a train with heavily loaded wagons can now pass to the Missouri, without once unloading or doubling of teams.

The rivers on the road to be crossed are—

North branch of the Cottonwood river.

Cottonwood river, (twice.)

Redwood river.

Medary creek.

Big Sioux river.

Perrine creek.

Rivière du Jacques or James river.

Beside a number of small creeks.

On the Cottonwood river I have constructed a rough bridge adapted to the present travel, but it is important that this river should be well bridged at both of the crossings. The rapid flow of emigration to this section of country also demands that these bridges be immediately constructed.

I have caused a good fording to be made across the Big Sioux river. The banks of this stream are firm and substantial and well timbered.

The bed of the river I paved with boulders and gravelled the same. So that there will be no difficulty in the way of teams passing across at any stage of water during the year.

I have also pursued the same course with the Rivière du Jacques or James river; but the bottom lands of this stream are low and wide

and in the spring are overflowed, but I do not apprehend that the stream is ever too deep to present serious impediments to trains. I expended a great deal of labor on this ford, having to haul stone a great distance.

I beg to refer you for full particulars in reference to the streams along the route to the "Itinerary," and able report of the engineer.

The country situated between the Minnesota river and the Big Sioux, comprising the Cottonwood valley, is rich prairie land with numerous small lakes scattered along.

The Cottonwood river is timbered, and the numerous lakes also have timber on their margins.

These lakes are filled with good clear water, and exist along the entire route to the Missouri river, and are at convenient distances for watering places.

The land between the Big Sioux and Rivière du Jacques, or James, is a vast sandy prairie with no timber whatever; this prairie crosses the Rivière du Jacques and extends to the Coteau du Missouri, where the country assumes new features, becoming hilly with small creeks emptying into the Missouri.

The land situated on these creeks is rich and generally covered with timber.

There are but two or three hills along the road that present obstacles, and those I have graded, so that the ascent and descent will be easily accomplished.

The most serious hills, are the bluffs along the Missouri river and the Coteau hills along the James river valley.

In making the approach to the Missouri river I found the bluffs high and precipitous, except at the mouth of Crow creek, and experienced a good deal of difficulty in selecting a place through which I could construct a road to the river; this was accomplished at last, and as near to the Bijou hill as the country permitted, in accordance with the wish of the department as expressed in my instructions.

At the outset of the expedition I was met by a large number of "Ihankton" Indians in the vicinity of Lake Benton, who warned me from entering their country, intimating if I crossed the Sioux river I must expect resistance from the "Ihankton" tribes.

At this time most alarming accounts had been received from the Yellow Medicine, and messengers were going through the country preparing the frontiers in anticipation of a general Indian war.

It placed me in a precarious situation to enter the country of hostile Indians who openly threatened me, and also to have in my rear all of the Sioux tribes at war with the whites.

In view of these difficulties I returned to my former camp on the Cottonwood river, and employed my men bridging that stream, and repairing wagons, harness, &c., while I could obtain information from "Yellow Medicine."

I hastened to the scene of difficulties, and, after consulting with Mr. Superintendent Cullen and Major Sherman, then in command at that place, I decided upon obtaining more and *better* ammunition and push on through their country. Having supplied myself with such

ammunition, I recrossed the Sioux, conciliating the Indians with suitable presents, and met with no further opposition from them.

I have no reason to believe that the Indians in that country will ever interfere with travellers over "that road."

I have caused to be erected along the route about 1,500 mounds; these mounds are from three to five feet in height, and are distant from each other about one-fourth of a mile.

The Missouri river is well timbered at the terminus of the road; the bottom lands are very rich, and present a fine field for the settler.

I have erected on the Cottonwood river a substantial log-house, with a store-room, &c., and have placed the stock and property in charge of a small number of men. I have also erected good stables for the protection of the animals; cut and secured hay sufficient, I think, to keep them through an ordinary winter.

The stock are generally in good condition, excepting the horses, which do not thrive without grain. I have lost a number of horses from no other reason than the absence of such provender.

I believe that mules and oxen are the more profitable stock for an expedition of this character.

The climate is temperate and very regular. The thermometrical observations for the trip average as follows:

	Sunrise.	Noon.	Sundown.
July.....	62°	82°	72°
August	56	78	72
September.....	49	70	61

During these months the winds were fresh and usually from the south.

The distance from Fort Ridgeley and the Missouri, as measured by the odometer, is 254 miles; the road is a few miles longer than it was possible to make it in order to have it practicable at all seasons of the year.

The distance from Fort Ridgeley to the South Pass, by this road, I believe to be at least 250 miles shorter than from Fort Leavenworth, on the Missouri, to the South Pass. This is a most valuable consideration for the emigrant, as well as claiming the attention of our countrymen in reference to the best route of the Pacific railroad.

In concluding my report, I beg to avail myself of this opportunity of recalling the circumstances which prevented the completion of my section of the road.

A delay of from six to eight weeks was experienced at St. Paul and vicinity, owing to the absence of funds to provide for the outfit, as explained in my correspondence of May and June to your department. This unanticipated delay caused my arrival on the Missouri river to be at a season when to have crossed it would have exposed the entire train to loss from lack of forage for the cattle.

In September, when I was encamped on the Missouri river, the grass was dried up and burning, and to have pushed further on would have been not merely of no avail but ruinous.

But for the unforeseen delay at the outset I could have completed

my section, and also have avoided the extra expense of provisions and a full complement of men requisite for the entire trip.

It was contemplated, in making up my outfit of provisions, to provide for the sustenance of the full number of men necessary for the trip to Independence Rock and then to Fort Kearney; and I was advised by your department that the sum of \$20,000 was placed to the credit of my portion of the road, in addition to the appropriation for the Fort Ridgeley and South Pass wagon road, and my instructions were to get up the outfit accordingly.

In thus providing the outfit and the wages of the men the Fort Ridgeley and South Pass wagon road appropriation has been exhausted, and I have drawn upon the \$20,000 allowed me out of the \$30,000 appropriated by Congress last year for the completion of that road only to the extent of not exceeding (\$10,000) ten thousand dollars.

Could I have started as soon as my outfit was complete, I should have completed the road to Independence Rock and thence to Fort Kearney, and not have exhausted the \$20,000 allowed me.

I regret that I cannot hand in the report of the surgeon, J. D. Goodrich. On my arrival at St. Paul he received news of the dangerous illness of his wife, and was compelled to hasten to her, and up to date has been unable to leave her.

The important observations and thermometrical record, together with a collection of flora of the country gathered by him, I herewith transmit; and as soon as I receive his report in full shall have the honor to transmit the same to you.

I take great pleasure in making favorable mention of my assistants, from all of whom I have received cheerful support.

I have the honor to be, very respectfully, your most obedient servant,

WM. H. NOBLES,

Sup't of the Fort Ridgeley and South Pass Wagon Road.

Honorable JACOB THOMPSON,
Secretary of the Interior.

FORT RIDGELEY AND SOUTH PASS WAGON ROAD.

Report of Samuel A. Medary, Engineer, to W. H. Nobles, Superintendent.

ST. PAUL, MINNESOTA, December, 1857.

SIR: In accordance with my instructions, I have the honor herewith to submit my report, accompanied with a map of the located line of the "Fort Ridgeley and South Pass Wagon Road," to the crossing of the Missouri river, with field notes of the same.

Very respectfully, your most obedient servant,

SAMUEL A. MEDARY,
Engineer.

WILLIAM H. NOBLES,
Superintendent, &c., &c.

Engineer's Report.

The initial point of the road is at the landing of the Fort Ridgeley ferry, on the west bank of the Minnesota river, agreeable to instructions from the Department of the Interior.

The first ($\frac{1}{10}$) seven-tenth mile of the road passes through a heavily timbered bottom, subject to inundation.

The road way is cut out (30) thirty feet in width; four hundred and thirty feet of the distance is through a grassy marsh, usually covered with from five to ten inches of water; this marsh has been a serious obstruction to military trains going west from Fort Ridgeley, as a greater portion of the year they have been compelled to cross the Minnesota river at the Lower Sioux Agency, (13 miles above,) to avoid it.

This obstacle is now overcome by a timber road bed, twelve feet in width, covered with earth and ditched.

Leaving the bottom land the road ascends to the high prairie by the most favorable of the boules or ravines; yet such is the ascent that, with the improvement of excavation and embankment, the average grade for one thousand feet is about seven hundred feet to the mile.

From the top of the bluff, 140 feet above high water mark, to the northern branch of the Cottonwood river, the road for sixteen miles passes over undulating prairies, interspersed with grassy lakes, near which is good grazing, but no wood.

A crossing of the north branch was made as soon as the stream, which heads in "Limping Devil's" lake, and the surrounding marshes, became well defined.

This stream has a sluggish current, and partakes, except after heavy rains, more of the nature of a slough. Its banks are low and soft, and present no reliable place for fording.

A bridge of 12 feet span and eight feet rise, (its cost not to exceed \$200,) would obviate the uncertainty of a ford, timber for which could

be obtained from the bottoms of the Minnesota river. There is no fuel of any description at this point, but the grazing is good.

From the north branch to the lower crossing of the main stream, (19½) nineteen and a half miles, the prairie becomes more undulating, until broken by the bluffs of the Big Cottonwood river.

The Cottonwood is a clear, rapid stream, with well defined banks; its bed, seventeen feet in width, is of gravel overlying blue clay. As the ford was selected at one of the rapids of the stream, high water mark does not indicate more than four feet rise at any season, and a safe crossing can always be made. A bridge, however, is required at this point. Good bridge timber can be procured in the immediate vicinity. The cost of this bridge will not exceed (\$750) seven hundred and fifty dollars.

The bottoms of the Cottonwood average three-fourths of a mile in width, of rich black sandy loam, covered with a luxuriant growth of grass; a skirting of timber extends the whole length of the stream, with occasional groves of cottonwood, oak, elm, ash, and hickory; the heavier portions of the timber are found near the mouth of the stream.

From the "lower crossing" the road passes over the divide between the main stream and its principal southern tributary, "Plum creek," a distance of four miles, this tributary, skirted with timber, flows rapidly between high banks.

The country in the vicinity is of first rate soil, affording good grazing and agricultural lands.

From Plum creek begins the first perceptible ascent toward the Coteau des Prairies. Running south of the "Big North Bend" of the Cottonwood, an air-line road of fourteen and a half miles extends to the "Big Woods," or upper crossing, over dry prairie land. In this distance the road crosses three small tributaries of the Cottonwood river, which have well defined banks and contain water at all seasons. At the upper crossing the bed of the stream is soft and scarcely fordable, while the bluffs are high and abrupt.

A bridge of seventeen feet span, crib abutments, and a rise of twelve feet, was constructed of round oak timber, not less than ten inches in diameter, with puncheon flooring well pinned down. The bluff on the south side rises abruptly nearly eighty feet. Heavy side hill cutting was necessary, by which an average grade of one in eleven for four hundred feet was obtained. But little work was necessary on the north side, an easy grade being procured over the natural surface. Within six miles of the upper crossing the Cottonwood takes its rise in numerous chalybeate springs; the water was drunk freely by our animals, but owing to the earthy salts held in solution it is unfit for washing. A few soft water springs mingle with the former, and two miles below the crossing a succession of them occurs. Groves of cottonwood, oak, and elm, are scattered on the bottoms and in the ravines in this vicinity.

The soil of the prairie is a rich, brown sandy loam, that of the bottoms a vegetable decomposition, varying in depth from ten inches to three feet, covered with a heavy undergrowth of hazel and plum.

By making two crossings of the Cottonwood river, the low marshy country between it and the Redwood creek on the north is avoided.

In passing over the country between these two streams last fall, while making a reconnaissance of this portion of the work or route, it was supposed that a direct course from Fort Ridgeley to Lake Benton would be practicable. The ground was frozen at the time, and a portion of it covered with snow; the impracticability was clearly apparent on the opening of spring, when the true character of the surface was discovered.

The first five miles of the road, after leaving the upper crossing, is over level prairie; for the next two, the country is rolling and broken, until passing one of the heads of the stream, when the surface becomes more regular, extending five miles to Redwood creek. Both approaches to the Redwood are good. The prairie rises gradually from the creek on the east, but on the west the rise is more sudden, assuming something of a bluff character. For nearly fifteen miles from this point the general course of the Redwood is northeast, its bluff banks increasing in height and abruptness, until almost impassable for wagons. It is skirted with timber of the same description as that of the Cottonwood.

The bed of the Redwood, fifteen miles in width, is of gravel, containing also numbers of red granite boulders. Thirteen and a half miles of rolling prairie, interspersed with many small lakes and marshes, extend from the Redwood creek to "Acorn Planting." The planting ground of "Grizzly Bear," a chief of the Sisseton's, receives its name from the quantity of acorns found about it. Oak being the prevailing timber, of which there are several hundred acres in the immediate vicinity.

From "Acorn Planting" four and a half miles of level and two of broken country extend to Coteau Perceé creek, at the southwest end of Lake Benton.

Coteau Perceé creek, the outlet of Lake Benton, winds through an opening in the Coteau des Prairies, running in a southwesterly direction to the Big Sioux river. This opening, called the "Mountain Pass" or "Hole-in-the-Mountain," half a mile in width, is enclosed by irregular bluffs from two to three hundred feet in height. The surface of the valley thus formed descends imperceptibly to the Big Sioux river. It is the only route known favorable for a railroad, through or over the Coteau des Prairies.

At the southwest end of Lake Benton are fine groves of oak, ash, and elm timber. Ascending again from the valley of the Coteau Perceé creek to the high land, the road passes for seventeen miles over a level prairie covered with a coarse dark grass, without a shrub to relieve, or an undulation to break the monotony. Seven miles from the lake water is found in grassy pools near the head of a small tributary of the Sioux river, near which is good grazing. Within six miles of the Sioux river, a gradual descent begins toward Medary creek and the valley of the river. A fording of the creek is made without difficulty, its bed and banks being of gravel. It is a clear rapid stream, twenty-two feet wide at the ford, with banks seven feet in height; soft bottom lands, a mile wide, extend to the Sioux river, but it is seldom impassable for teams. The Big Sioux river, the second largest stream between the Minnesota and Missouri rivers, of

sixty-two feet width, with a hard gravelly bed, is easily forded, and offers no obstruction to the road except during the spring freshets. The ford was greatly improved by laying large boulders across the stream, upon which gravel was thrown, partially raising its bed; the river is skirted with cottonwood, elm, and oak, a distance of twelve miles up the stream, the timber then ceases and does not again appear in any quantity; below it extends with occasional intervals to the Iowa State line.

The valley of the Sioux affords good grazing, and is susceptible of high cultivation. Above the crossing on the west side of the river the bottoms are low and wet, extending beyond the outlet of Lake Campbell, but at the crossing high bottom land begins, over which the road passes to the bluff, a mile and a half from the river. This high bottom land, seldom if ever overflowed, continues several miles south. From the bluff the road crosses the "divide" between the river and Perrine creek; this creek is crossed five and a half miles from the Sioux. It is a small, sluggish, grassy stream, subject to sudden rises, its banks are low and soft, while its narrow valley lies between high bluffs; the ford was improved by a pavement of flat stones, obtained from the surface of the adjoining prairies.

On this creek there is no wood, but at Lake Campbell, into which it empties, three miles north, a light growth of elm, oak, and cottonwood lines the banks.

Four miles further west Willow lake is passed, where a few willow and elm trees furnish indifferent fuel. On a small lake lying three-quarters of a mile north of the road and seven miles from Willow lake is the last road on the route until reaching the foot of the Coteau du Missouri, seventy miles distant. From the Big Sioux river to this last timbered lake, the prairies are rolling with occasional broken portions. Passing thirteen and a half miles further, over a level and undulating prairie, with occasional grassy lakes, an inlet of Lake Thompson is reached.

This lake, the largest on the route, about ten miles long north and south, by five or six in width, it appears has never been mentioned in any previous explorations, although a sheet of water larger and more pleasing than Lake Benton, even without possessing the groves of timber which decorate the shores of the latter, a few lone trees on its north bank being its quantum of timber.

On an elevation in the prairie, commanding an extensive view of the surrounding country, five miles before reaching the inlet of Lake Thompson, numerous excavations, ranged in a semi-circle, were discovered, which were supposed from their resemblance to be old Indian fortifications.

From Lake Thompson to Morse's creek, 18 miles, is over wavy prairie, the combs of which, extending north and south, occur every mile or two.

Five miles before reaching Morse's creek, Wolf branch is crossed. Its well defined, irregular banks make it visible for several miles when approached from the east. Water stands in gravelly bottomed pools; from the smaller ones, shaded by the long jointed grass from the sun, cool refreshing draughts of water were obtained.

Morse's creek, emptying in the James river about eight miles below the ford, seems to have its source in Lake Thompson. This creek was crossed over at a dry portion of its bed, upon which were indications of recent running water. A succession of pools, often ten feet deep, contain water at all seasons. At the deepest of these pools one or the other of the banks generally rise to a height of twenty or twenty-five feet, while on either side of the dry portions of the stream the banks seldom exceed four feet in height.

To the James river, fourteen and a half miles, the prairie gradually increases in its undulations until reaching the broken bluffs of the river. In this distance are no signs of water, and the growth of grass becomes short and thin.

The valley of the James, averaging a mile in width, lying between high uniform bluffs, is of a rich alluvial deposit, bearing a heavy growth of various grasses and forming a most excellent grazing country, with the one fault, lack of timber. At the mouth of Morse's creek, and for several miles up its valley, a few large elm and oak trees are found which, from the numerous remains of Indian camp fires near by, must have been found in greater numbers at an earlier day. At this point is the only timber for ten miles above or below the ford; neither is there drift wood along the banks of the river, which would indicate the presence of timber up the stream.

The drift of grass and weeds along the foot of the bluffs indicates the annual overflow of the whole valley, and the rise of the river to be about eighteen feet. The river, ninety feet in width, winds tortuously from bluff to bluff, rapidly but noiselessly. Its bed and banks are soft and miry. A good ford was constructed at the most favorable point by paving the bed and approaches with boulders and filling in with coarse gravel.

Leaving the valley of the James, a rolling prairie extends 52 miles to Sandy Hill creek, which is easily forded. What gave this creek its name as found on the maps received from the Interior Department is not apparent; nothing having the appearance of sandy hills was discovered within fifteen miles of the crossing. The name is calculated to give a wrong idea of the country in the vicinity of the road, which in reality is of good second rate soil, affording excellent grazing.

To the banks of the Plateau du Coteau du Missouri, seventeen and a half miles, is over a level prairie. Water is obtained once in this distance from a small marsh lying to the south of the road, almost hidden by the long grass. The Coteau rises abruptly out of the level prairie to elevations of from two to four hundred feet. The direction of the eastern façade is nearly north and south, running parallel with the James river from twenty to thirty miles distant.

At the base of the Coteau are several clear gushing springs, which lose themselves immediately in the light soil of the prairie. Three springs furnish the only continually running water between the Big Sioux and Missouri rivers, excepting that of the James.

In the ravines in the face of the Coteau are considerable quantities of oak, ash, and elm timber of good growth. A favorable ascent of the Coteau was obtained on a narrow divide between the two ravines, which, extending nearly a mile into the lower prairie, formed an easy

grade to the high land. Two miles over rolling prairie, from the edge of the high land, a small lake of good water is passed, lying in a narrow valley. Two miles further, over a broken surface, reaches the summit of the Coteau.

From the summit to Crow creek, fourteen miles, the road passes over gently undulating prairie, with occasional mounds from twenty to sixty feet in height, and three miles over broken and hilly ground.

In this distance the dry bed of a branch of Crow creek is crossed, which seldom contains water; when it does not none is obtained after leaving the small lake near the edge of the Coteau until reaching "Crow" creek, nineteen miles. This is the longest portion of the route between Fort Ridgeley and the Missouri river in which water is not found.

As soon as Crow creek is reached it is crossed to the north side, where good water and grazing is found, but no wood. Three and a half miles further another crossing of the same creek is made through a valley one mile wide. Immediately after heavy rains this valley becomes quite soft, wheels cutting through the light soil three or four inches thick, overlying sand and gravel; a few hours of warm sun, however, renders the surface perfectly hard.

There is scarcely any vegetation in this valley. The grasses hardly show themselves. Different varieties of cactus only seem to have a healthy growth.

Four miles down the valley of Crow creek, elm, willow, and oak begin to line the banks and cover the peninsulas formed by the bends of the creek.

This timber increases in size and quantity until reaching the Missouri river at the mouth of the creek, when oak and ash become the prevailing timber.

On the south side near the creek, the country is somewhat broken, while further back it becomes gently undulating.

For eight miles the road continues on the undulating surface nearly parallel with the stream. Thence three miles to one of the tributaries of Crow creek, where good wood, water, and grass are found in abundance.

Neither in its branches nor in Crow creek is there running water, except in rainy seasons.

The soil of Crow creek is for the most part of first rate quality, while that of the high praries is second rate, with here and there favorable exceptions. From the south branch of Crow creek this road suddenly rises to the high level Coteau, which continues eleven miles to Beaver creek.

The road crosses this creek five miles from its mouth over an old beaver dam; wood, water, and good grass are to be found in any portion of the valley of this creek.

For nine miles further the road continues over a high, level coteau, where a gradual descent of from eighty to one hundred feet to the mile for five miles reaches to the banks of the Missouri river, the western terminus of the road as completed this season.

In conclusion of my report, I have only to say that the route selected and the road as built is, in my opinion, the only one that combines

the essentials of wood, water, and grazing the whole length. Any deviation to the south would have thrown the road beyond the sources of the tributaries emptying into the Crow creek and James river streams. It has also been a constant study to carry the road in as direct a line as possible, keeping in view its ultimate adaptability for the route of the "Pacific Railroad." At the terminus of the road there are dense forests of good timber, and the land along the entire route is such as will invite the early attention of the emigrant.

Very respectfully, your obedient servant,

SAM. A. MEDARY,
Engineer.

Colonel WM. H. NOBLES,
Superintendent Fort Ridgeley and South Pass Wagon Road.

Field notes of the location of the Fort Ridgeley and South Pass wagon road from the Missouri river to Fort Ridgeley, Sam. A. Medary, engineer.

Stations.	Courses.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees.</i>					
0	N. 73 E.	114	114	.296	.296	
1	N. 53 $\frac{1}{2}$ E.	213	99	.258	.554	
2	N. 31 E.	496	283	.736	1.290	
3	N. 46 $\frac{1}{2}$ E.	875	379	.985	2.275	High bluffs overlooking Missouri river; country rolling
4	N. 6 E.	1,159	284	.739	3.014	Ravine to the Missouri
5	N. 70 E.	1,540	381	.991	4.005	
6	N. 49 E.	2,555	1,105	2.639	6.644	
7	N. 30 E.	3,426	871	2.266	8.910	
8	N. 14 E.	4,105	739	1.922	10.832	Country level.
9	N. 6 $\frac{1}{2}$ E.	4,436	271	.705	11.537	Do.
10	N. 8 W.	4,805	369	.959	12.496	
11	North....	5,011	206	.536	13.032	
12	N. 10 E.	5,404	393	1.022	14.054	Descent to the valley of Beaver Dam creek; course west to the Missouri, and distant 4 miles. Good wood, water, and grass. Day's travel, 14.054 miles. Erected 60 mounds. Sept. 1, 1857.
13	N. 5 E.	5,023	219	.570	14.624	Ascent from the valley to high prairie.
14	N. 14 W.	5,934	311	.809	15.433	Country level, and range of ravines to the left.
15	N. 19 E.	6,843	909	2.364	17.797	Country level to bluffs overlooking Fort Lookout.
16	N. 16 $\frac{1}{2}$ E.	7,101	258	.671	18.468	Country rolling.
17	N. 15 E.	7,523	422	1.097	19.565	Summit of coteau between Beaver creek and Crow creek.
18	N. 22 E.	7,755	232	.604	20.169	Rolling prairie.
19	N. 72 E.	7,780	25	.065	20.234	Do.

FIELD NOTES—Continued.

Stations.	Courses.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees.</i>					
20	N. 76 E.	7,970	190	.194	20.728	Deep ravine.
21	N. 27 E.	8,206	236	.614	21.342	Summit of coteau, &c.
22	N. 5 E.	8,518	312	.811	22.153	Commence descent to Crow creek.
23	N. 8 E.	8,946	42	1.113	23.266	
24	N. 22½ E	9,135	189	.492	23.758	
25	N. 7 W.	9,665	530	1.378	25.136	Sept. 2.—Camped on Crow creek. Good wood, water, and grass. Day's travel, 11.082 miles. Erected 33 mounds.
26	N. 15 E.	9,806	201	.523	25.059	
27	N. 35 E.	10,810	944	2.455	28.114	
28	N. 9 E.	10,987	177	.460	28.574	
29	N. 9 W.	11,077	90	.234	28.808	Descent of bluffs to Crow creek.
30	N. 15 W.	11,105	88	.229	29.037	
31	N. 10 E.	11,270	105	.273	29.310	Camp on south side Crow creek; two creeks emptying into creek on opposite side; well wooded; good timber on this creek to its mouth. Day's travel, 4.174 miles. Erected 19 mounds.
28	N. 81 E.	11,787	660	2.541	30.655	Sept. 3.—Retraced line to Station 27 for higher ground; the valley of the creek being soft land.
29	N. 81 E.	11,911	124	.322	30.977	Country level.
30	N. 76 E.	12,992	1,081	2.812	33.789	Low prairie.
31	N. 56 E.	13,200	208	.541	34.330	
32	N. 52 E.	13,040	440	1.144	35.474	Cross valley of Crow creek.
33	N. 26 E.	13,921	281	.731	36.205	Quantities of cactus, and a large prairie dog village.
34	N. 31 E.	14,394	473	1.230	37.435	
35	N. 45 E.	14,045	251	.653	38.088	Descent into valley leading to Crow creek.
36	N. 62 E.	14,818	173	.450	38.538	
37	East -----	14,925	107	.278	38.816	Camped Sept. 4.—Water and grass. Distance, 10.24½ miles; 52 mounds.
38	N. 78 E.	15,132	192	.499	39.355	
39	N. 80½ E.	15,232	100	.260	39.615	
40	S. 87 E.	15,296	64	.166	39.781	
41	East -----	15,411	115	.299	40.080	Country rolling.
42	N. 57 E.	15,416	55	.043	40.223	
43	N. 46 E.	15,647	181	.471	40.694	
44	N. 28 E.	15,731	84	.218	40.912	
45	N. 4 W.	15,860	129	.336	41.248	
46	N. 61½ E.	16,373	513	1.334	42.582	Country level.
47	N. 50 E.	17,095	1,322	3.438	46.020	
48	N. 62 E.	18,364	669	1.740	47.760	Large stone mound.
49	N. 62 E.	20,896	2,532	6.585	54.345	
50	S. 9 E.	21,101	205	.010	55.035	
51	N. 28 E.	21,361	200	.520	55.555	Small lake, Sept 5.
52	N. 50 E.	21,676	315	.819	56.374	Same.—Distance, 17.588 miles; 78 mounds; 2 miles beyond, good water, wood, and grass.
53	N. 14 E.	21,790	114	.297	56.671	September 6th.
54	N. 58 E.	21,898	108	.280	56.951	Country rolling.

FIELD NOTES—Continued.

Stations.	Courses.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of revolutions.	Remarks.
	<i>Degrees.</i>					
55	N. 73 E.	22, 104	206	.536	57.489	
56	S. 82 E.	22, 264	160	.417	51.904	Top of bluffs.
57	N. 55 E.	22, 333	69	.177	58.083	Sept. 5.—Camped at foot of bluffs. Good wood and spring. Easy ascent to summit. Distance, 1.709 mile. Mounds, 22.
58	N. 55 E.	22, 430	97	.252	58.335	
59	N. 45 E.	22, 696	266	.692	59.027	Foot of slope of the bluffs.
60	N. 60 E.	22, 935	239	.622	59.649	Ascent to coteau of the James.
61	N. 58 E.	23, 783	848	2.205	61.854	Level prairie.
62	N. 63 E.	24, 185	402	6.045	62.899	
63	N. 71 E.	25, 154	969	2.521	65.420	Small shallow lake to-night.
64	N. 70 E.	25, 635	481	1.251	66.671	
65	N. 70 E.	26, 612	977	2.541	69.212	
66	N. 65 E.	27, 515	903	2.348	71.560	
67	N. 62 E.	28, 077	562	1.462	73.022	
68	N. 75 E.	29, 084	1, 007	2.619	75.641	Crossing of Sand Hill creek.
69	N. 75 E.	30, 665	1, 581	4.112	79.753	Rolling prairie.
70	N. 65 E.	31, 064	399	1.037	80.790	Top of bluff of James river.
71	N. 25 E.	31, 127	63	.164	80.954	Foot of bluffs, and high-water mark of the James.
72	N. 74 E.	31, 240	113	.284	81.248	Camp on James river; 82 feet wide; from tops of banks, 123 feet. Distance, 23 miles. Mounds, 98. Sept. 8, 1857.
73	N. 48 E.	31, 355	115	.299	81.547	Camp on east bank, Sept. 14.
74	N. 24 E.	31, 443	88	.229	81.776	Top of bluffs.
75	N. 39 E.	31, 661	218	.567	82.343	Rolling prairie and marshes now dry.
76	N. 62 E.	31, 913	252	.655	82.998	
77	N. 70 E.	32, 617	704	1.831	84.829	
78	N. 71 E.	36, 957	4, 340	11.288	96.117	High level prairie.
79	S. 68 E.	37, 110	143	.372	96.489	Crossed Morse's creek.
80	N. 68 E.	37, 534	434	1.128	96.617	
81	N. 71 E.	28, 063	529	1.376	98.993	
82	N. 77 E.	38, 632	569	1.480	100.473	September 14.—Camped on Wolfe creek, 15 feet wide; good grass and water. Distance 18.926 miles; 80 mounds.
83	N. 70 E.	38, 740	108	.281	100.754	
84	N. 66 E.	39, 086	346	.900	101.654	Country level.
85	N. 65 E.	40, 379	1, 293	3.362	105.016	
86	N. 76 E.	42, 059	1, 680	4.370	109.386	
87	N. 77 E.	42, 755	696	1.810	111.196	Lake Thompson to the left.
88	N. 81 E.	43, 063	308	.801	111.997	
89	N. 68 E.	43, 195	132	.343	112.340	
90	S. 83 E.	43, 142	217	.565	112.905	
91	N. 49 E.	43, 591	179	.465	113.370	Crossed inlet of Lake Thompson.
92	N. 77 E.	43, 712	121	.315	113.685	Rolling country.
93	N. 75 E.	43, 976	264	.686	114.371	Do.
94	S. 80 E.	44, 013	37	.097	114.468	Rolling; small country lake.
95	S. 64 E.	44, 320	307	.798	115.266	
96	S. 78 E.	44, 738	418	1.087	116.353	Marshy land.
97	N. 75 E.	45, 040	302	.785	117.138	

FIELD NOTES—Continued.

Station.	Courses.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees.</i>					
98	N. 66° E.	45, 376	336	. 875	118. 013	Indian fortifications, and small lake.
99	N. 76° E.	45, 925	549	1. 427	119. 440	Camped on Lizard lake; no wood; water bad. Distance 18. 967 miles; 92 mounds. September 15.
100	S. 86° E.	46, 113	188	. 489	119. 029	
100	N. 79° E.	46, 151	38	. 100	120. 029	
101	N. 66° E.	46, 237	86	. 223	120. 252	
102	N. 58° E.	46, 426	189	. 491	120. 743	
103	N. 69° E.	46, 509	83	. 216	120. 959	Country undulating and filled with small lakes.
104	N. 79° E.	46, 663	154	. 401	121. 360	
105	N. 80° E.	46, 994	331	. 861	122. 221	
106	N. 68° E.	47, 238	244	. 634	122. 855	
107	N. 75° E.	47, 533	295	. 768	123. 623	
108	N. 74° E.	47, 842	309	. 803	124. 426	
109	N. 71° E.	48, 501	659	1. 714	126. 140	
110	N. 82° E.	48, 846	345	. 897	127. 037	
111	N. 82° E.	49, 390	544	1. 415	128. 452	One mile north lake with timber.
112	S. 83° E.	49, 531	141	. 366	128. 818	Small lake to night.
113	N. 79° E.	49, 695	164	. 427	129. 245	
114	N. 84° E.	50, 287	592	1. 540	130. 785	Level country.
115	S. 88° E.	50, 428	141	. 366	131. 151	
116	N. 81° E.	50, 821	393	1. 023	132. 174	
117	N. 69° E.	51, 267	446	1. 160	133. 334	
118	N. 54° E.	51, 370	103	. 267	133. 601	
119	N. 52° E.	51, 513	143	. 372	133. 973	Willow lake.
120	N. 70° E.	51, 735	222	. 577	134. 550	Small lake.
121	N. 80° E.	51, 905	170	. 442	134. 992	
122	N. 76° E.	52, 355	450	1. 170	136. 163	Small lakes.
123	S. 77° E.	52, 555	200	. 520	136. 683	
124	N. 82° E.	52, 837	282	. 734	137. 417	
125	East. ----	53, 070	233	. 606	138. 023	
126	S. 70° E.	53, 145	75	. 195	138. 218	Camped on Perrine creek; good water, grass, and wood. Distance 18. 038 miles; 125 mounds. September 16.
127	S. 70° E.	53, 190	45	. 117	138. 335	
128	N. 50° E.	53, 561	371	. 906	139. 300	
129	N. 60° E.	53, 794	233	. 606	139. 906	Crossed small stream.
131	N. 44° E.	54, 010	216	. 561	140. 468	
132	N. 47° E.	54, 162	152	. 395	140. 863	Small lake.
133	N. 45° E.	54, 321	159	. 414	141. 277	
134	N. 47° E.	54, 610	290	. 752	142. 029	
135	N. 69° E.	55, 344	734	1. 908	143. 937	September 17.—Camped on west bank of Big Sioux river, 63 feet wide; good wood, water, and grass. Distance 5 $\frac{7}{16}$ miles; 20 mounds.
136	N. 69° E.	55, 359	5	. 039	143. 976	Crossing of the Sioux.
137	N. 51° E.	55, 743	384	. 999	144. 975	Bottom between Sioux and Medary creek.
138	N. 51° E.	56, 014	271	. 705	145. 680	Bottom of Medary creek.
139	N. 58° E.	56, 519	505	1. 313	146. 993	High prairie.
140	N. 49° E.	56, 783	264	. 687	147. 680	Do.
141	N. 57° E.	57, 101	318	. 827	148. 507	Do.

FIELD NOTES—Continued.

Station.	Course.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees</i>					
142	N. 62° E.	57,309	208	.540	149.047	High prairie.
143	N. 66° E.	58,250	941	2.448	151.495	Do.
144	N. 83° E.	58,990	740	1.925	153.420	Do.
145	N. 88° E.	59,194	204	.530	153.950	Do.
146	N. 80° E.	59,370	176	.453	154.408	Do.
147	N. 76° E.	59,740	370	.962	155.370	Do.
148	N. 79° E.	59,960	220	.570	155.942	Do.
149	N. 66° E.	60,126	166	.432	156.374	Do.
150	N. 77° E.	60,445	319	.830	157.240	Do.
151	N. 67° E.	61,173	728	1.895	159.099	
152	N. 53° E.	61,676	503	1.307	160.406	Watering place, branch of Medary creek.
153	N. 62° E.	61,870	194	.504	160.901	
154	N. 69° E.	62,655	785	2.042	162.952	
155	S. 82° E.	62,758	103	.268	163.220	Crossing of small creek running south-westerly.
156	N. 81° E.	63,189	431	1.121	164.341	
157	N. 71° E.	63,463	274	.712	165.053	
158	N. 70° E.	63,652	189	.491	165.544	
159	N. 51° E.	63,895	243	.632	166.176	
160	N. 59° E.	64,143	248	.645	166.821	
161	N. 66° E.	64,400	257	.669	167.490	Camp at "Hole-in-the-Mountain;" good wood, water, and grass. Distance 23.553 miles; 100 mounds. Sept. 19.
162	N. 51° E.	64,520	120	.312	167.802	
163	N. 52° E.	64,598	78	.202	168.004	Descent of the mountain pass.
164	S. 87° E.	64,713	115	.299	168.303	Crossing the mountain pass.
165	N. 58° E.	64,900	187	.487	168.790	
166	N. 78° E.	65,043	143	.372	169.162	Hills.
167	S. 81° E.	65,184	141	.367	169.529	
168	N. 76° E.	65,526	342	.889	170.418	Small creek leading to Lake Benton.
169	N. 81° E.	65,966	440	1.144	171.562	
170	N. 77° E.	66,581	615	1.599	173.161	
171	S. 83° E.	66,706	125	.326	173.487	Marsh to the left.
172	N. 60° E.	66,849	143	.372	172.859	
173	N. 51° W.	66,960	111	.289	174.148	Indian village Grizzly.
174	N. 23° E.	67,231	371	.965	175.113	Bear's pound.
175	N. 51° E.	62,703	372	.967	176.080	Fine growth of oak timber.
176	N. 85° E.	68,172	469	1.220	177.300	Lakes on both sides.
177	N. 55° E.	68,390	218	.567	177.687	
178	N. 44° E.	68,664	274	.713	178.580	North is Cottonwood lake.
179	N. 38° E.	68,867	203	.528	179.108	
180	N. 43° E.	69,205	338	.879	179.987	
181	N. 56° E.	70,270	1,065	2.769	182.756	
182	N. 72° E.	70,400	130	.338	183.094	
183	N. 25° E.	70,663	263	.685	183.779	
184	N. 44° E.	70,890	227	.590	184.369	Lake, with timber; three lakes to the right.
185	East.....	71,016	126	.328	184.697	
186	S. 66° E.	71,366	350	.910	185.607	
187	East.....	71,964	598	1.555	187.662	
188	N. 21° N.	72,157	193	.502	187.664	Crossing of Redwood river, and camped on east bank; wood, water, and grass in abundance. Distance, 20.174 miles.

PACIFIC WAGON ROADS FIELD NOTES—Continued.

Station.	Courses.	Whole number of revolutions	Difference in revolutions	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees.</i>					
189	S. 76 E.	72,403	246	.640	188.304	
190	East -----	72,582	179	.465	188.769	Marshy lands and lakes.
191	N. 89 E.	72,835	253	.685	189.427	Lakes, with timber.
192	S. 88 E.	73,000	165	.429	189.856	
193	S. 72 E.	73,265	265	.690	190.546	
194	S. 60 E.	73,384	119	.309	190.855	Lakes near the line, to left.
195	S. 54 E.	73,471	87	.227	191.082	Rolling country.
196	East -----	73,661	190	.494	191.576	Do.
197	N. 88 E.	74,022	361	.939	192.515	Do.
198	N. 68 E.	74,319	297	.772	193.287	Do.
199	N. 83 E.	74,440	121	.315	193.602	Do.
200	N. 63 E.	75,016	576	1.498	195.100	Creek, head of Cottonwood.
201	N. 77 E.	75,203	187	.487	195.587	Do. do.
202	S. 66 E.	75,360	157	.408	195.995	Country rolling and small grassy lakes.
203	S. 76 E.	75,504	144	.374	196.369	
204	S. 88 E.	75,716	212	.551	196.290	Do. do.
205	S. 82 E.	75,782	66	.172	197.092	
206	N. 76 E.	76,230	448	1.165	198.257	Do. do.
207	N. 74 E.	76,466	236	.614	198.871	Do. do.
208	N. 64 E.	76,529	63	.164	199.035	
209	S. 80 E.	76,779	250	.650	199.688	Crossing Cottonwood river; camp at Big Wood of the Cottonwood; fine timber, water, and grass. Distance, 12.124 miles. September 22.
210	N. 85 E.	77,027	248	.145	200.330	
211	East -----	77,988	961	2.499	202.829	
212	N. 80 E.	83,912	5,924	15.407	218.231	This course crosses three good watering places and Plum creek, a branch of the Cottonwood; camp at lower crossings of Cottonwood river. Distance, 18.551 miles.
213	N. 86 E.	84,027	115	.299	218.535	Rolling country, with lakes and marshes.
214	S. 84 E.	84,406	379	.986	219.521	Do. do.
215	S. 83 E.	85,107	701	1.823	221.344	Do. do.
216	N. 62 E.	86,043	936	2.435	223.779	Do. do.
217	N. 71 E.	86,669	626	1.628	225.407	Small creek.
218	N. 68 E.	87,393	724	1.883	227.290	
219	N. 77 E.	87,640	247	.642	227.932	
220	N. 49 E.	87,805	165	.429	228.363	
221	N. 59 E.	88,291	486	1.264	229.625	
222	N. 62 E.	88,827	536	1.394	231.019	
223	N. 56 E.	89,475	648	1.685	232.704	
224	N. 69 E.	90,127	652	1.696	234.400	
225	N. 16 E.	90,306	179	.466	234.866	
226	N. 53 E.	90,780	474	1.232	236.098	
227	N. 56 E.	91,390	610	1.587	237.685	Crossing of north of Cottonwood river; water and grass. Distance, 19.446 miles.
228	S. 48 E.	91,504	114	.216	237.981	
229	N. 72 E.	92,206	702	1.826	239.807	
230	N. 69 E.	92,659	453	1.178	240.985	Intersection of government trail from Fort Randall to Fort Ridgeley, via Sioux agency.

FIELD NOTES—Continued.

Station.	Courses.	Whole number of revolutions.	Difference in revolutions.	Difference in miles.	Whole number of miles.	Remarks.
	<i>Degrees.</i>					
231	N. 84 E.	93,238	579	1.506	241.491	
232	N. 49 E.	94,119	881	2.291	243.782	
233	N. 46 E.	95,020	901	2.344	246.126	
234	N. 20 E.	95,377	357	.928	247.054	
235	N. 39 E.	95,740	363	.943	247.997	Grassy lakes and marshes extending to Redwood river.
236	N. 13 E.	96,651	911	2.369	250.366	
237	N. 16 E.	97,229	578	1.503	251.869	
238	N. 5 E.	97,891	662	1.722	253.591	
239	N. 19 E.	97,991	100	.260	253.851	Top of bluff of Minnesota river; descent 150 feet.
240	N. 34 E.	98,291	300	.780	254.631	Bottom bordering on the Minnesota river, with heavy timber; course ends at Fort Ridgeley rope ferry; river is 150 feet wide, with good banks.
241	N. 30 E.	98,471	180	.466	254.797	To Fort Ridgeley and intersection of government road to Fort Snelling <i>via</i> Traverse de Sioux and Shakopee. Total distance from Fort Ridgeley to Missouri river, 254.797 miles.

Preliminary report of F. W. Lander, chief engineer, upon his explorations west of the South Pass, for a suitable location for the Fort Kearney, South Pass, and Honey Lake wagon road. Wm. M. F. Magraw, superintendent. Constructed under the direction of the Department of the Interior, 1857.

WASHINGTON, November 30, 1857.

SIR: The instructions of the department to the superintendent, and through him to the chief engineer, directed the construction of a wagon road from Fort Kearny to City Rocks on the shortest practicable route.

The word "practicable" was here susceptible of many definitions. The road to be built was for the benefit of the overland emigration.

In interpreting and following what I considered to be the letter of the instructions, I was guided by the following conclusions, viz:

A large sum of money had been appropriated to build a practicable wagon road over a route where a practicable wagon road had existed for the last ten years. Want of grass, danger of loss of stock by deleterious and poisonous waters, extreme tolls levied at the traders' bridges, and the circuitous route pursued, were difficulties to be overcome or obviated.

But the law of Congress and the instructions of the department might also be interpreted as directing that a new road was to be built rather than that an old road was to be improved.

A route has therefore been sought over the more difficult portions of the division, which would—

First. Avoid the alkaline plains of the desert of the Big Sandy.

Second. Pass across Green river at a point above the depth of water requiring ferriage.

Third. Throughout the length avoid bridge-crossings and be abundantly furnished with excellent grass and fuel. It was also important to find minor routes and cut-off lines, which, by the expenditure of small sums of money, could be made of practicable passage for wagon trains, that the emigration might be divided and suffer less from want of pasturage.

For these purposes the whole country between the South Pass and City Rocks was explored, surveyed and mapped, and the result is that the route of emigration may actually be shortened seven days' travel in a distance of five hundred miles, the map lettered for explanation is herewith transmitted.

A preliminary reconnaissance, made during the month of June by the chief engineer, has established the fact that several days' travel can be saved upon the rear division between Fort Kearney and the South Pass. The emigration can also be divided on this division, much sandy road avoided, and many of the traders' bridges rendered free by the expenditure of the sum of \$40,000.

H. K. Nichols, first assistant engineer, was instructed to furnish the reconnaissances of the rear division, and as he failed to do so, they are now under progress of completion in charge of Assistant Engineer Jno. F. Mullowny.

From the non-arrival of the building train at the South Pass, the completion of any portion of the work laid out must be deferred to another season.

The line A upon the accompanying sketch is a northern route from the South Pass to City Rocks by way of Fort Hall. It is better adapted for the passage of the ox-team emigration to the Pacific than any other line west of the South Pass, as there are no poisonous waters upon it, nor any ferries or expensive bridges required. It is well wooded and timbered throughout its length, and the great grassed valley of the Pines, which it bisects, is a halting ground, the advantages of which to this class of emigration, after a passage of the eastern sand plains, cannot be over-estimated. A preferable line to the main northern route may be found through McDougal's Gap, (see sketch ;) but this line cannot be graded within the limits of the present appropriation, much of which has been expended.

Choice could be made by the department between the northern route (A, as designated upon the sketch) and the extreme southern line, B. The latter, which passes through the upper Mormon settlements, is of important character, and the shortest yet discovered by the season's explorations. Had difficulties not occurred with the Mormon population, this road could have been very cheaply and rapidly graded by the aid of the labor of Utah Territory. It is neither well wooded nor abundantly grassed, but it is a direct route of easy slopes from the South Pass to City Rocks.

The intermediate routes or connexion lines designated upon the sketch should be laid open for travel.

The principal of these is the Wind River mountains line, (marked X,) which should receive the especial attention of the department. The facilities afforded by this route when graded will repay the country the whole amount appropriated by Congress for the wagon road.

Mr. John Hockaday, an experienced mountaineer, discovered in 1854 a cut-off route across the Bear River mountains, over which he attempted to turn the emigration, and he erected a bridge for the purpose of aiding the adoption of the line.

For light trains this route is decidedly preferable to the old travelled road, and may be so improved as to serve the important purpose of dividing the travel and preventing the present great loss of stock from want of grass.

The wagon road expedition, consisting of a full equipment of tools, wagons, &c., now encamped on Wind river, can grade the Wind River mountain line, which avoids the Big Sandy desert and the ferries of Green river, and open the Hockaday's cut-off to travel, and the bridge can be purchased within the limits of that portion of the appropriation which I have been informed is set apart for the building of the eastern division. No wagon has ever been taken through the Bear River mountains north of Hockaday's cut-off.

An eighty pound measuring vehicle, taken apart and packed on mules, was carried over the most practicable northern pass by the advance party of engineers of the wagon road expedition.

The statement in reference to the improvement of Hockaday's cut-off is made in apprehension of the loss of the mules of the main expedition.

If they are successfully wintered, the northern route, A, or the southern route, B, at the option of the department, can be built, many of the connexion lines opened, and the rear division of the South Pass to Fort Kearney materially improved within the limits of the appropriation.

In the last instance, it is proposed that the work is to be done during the summer of 1859, and after the division from the South Pass to City Rocks is completed the bridges of the rear division to be rendered free by the proceeds of the sale of the stock of the expedition when the work is over. This proposal to postpone the purchase of the traders' bridges until 1859 must be qualified by the presumption of the fact that the present tolls will be an exorbitant tax on government transportation during 1858, if large military operations are carried on in Utah Territory.

The arrival of Assistant Engineer Mulloony will bring intelligence of a new route, by which it is proposed to avoid the bridge over the north fork of the Platte. The price of fifteen thousand dollars (\$15,000) is asked for this bridge by the owner, and the passage of it yearly costs the emigration from four to ten thousand dollars. The bridge is offered for sale in apprehension of the building of a free bridge by the wagon road expedition. The owner, Mr. John Richard, is a reliable mountain trader. He proposes either to give bonds to keep the bridge in good repair for six years, and to renew it if destroyed within that time, or to receive only a sixth part of the purchase money yearly. The same arrangement could undoubtedly be made in relation to the bridge at Laramie. In view of the large military operations now going on in the country, the War Department might properly join their funds with those of the wagon road in the purchase of the Richard bridge.

OTHER RESULTS OF EXPLORATION.

Fabulous accounts existing of a desert which extends between the Big Sandy and Green rivers, it was determined to examine it. The first passage across it was made by the chief engineer. It was afterwards thoroughly explored by B. F. Ficklin.

This desert is nearly destitute of herbage, the wild sage or artemisia lining a few depressions of the surface, and grass being found only in the great cañons which extend from the centre of the desert to Green river. These cañons are water drains during the early spring months.

There are several springs upon the desert, which become dry towards the close of the emigration. These may be made of service at low cost, and by artificial means other copious supplies of water may be procured. Were such a result required, the headwaters of the Big Sandy could even be delivered through the centre of the desert plain, and the whole surface might be irrigated from the mountain tributaries of the New Forks of the Big Sandy and Green rivers.

As excellent lines are found which avoid the desert, such extensive operations are not required for the construction of new and direct wagon roads.

The great upper valley of Green river and of the New Forks, its

principal tributary, has been surveyed and mapped. This well timbered and abundantly grassed region is undoubtedly suited to agricultural purposes, and is one of the immense herding grounds of the Shoshonee tribe of Indians.

The first Wahsatch, or Bear River, mountain range divides John Gray's river, a main tributary of Lewis' Fork of the Columbia, from Green River valley.

Through several low passes in the more northern chain passage may be made to the headwaters of the Snake or to Wind river, the principal tributary of the Yellowstone. Passing in a westerly direction, the second Wahsatch range and main divide, separating the waters of the John Gray from the Salt river, is encountered. Both of these rivers are large tributaries of Lewis' Fork. Further westward a third range is encountered, dividing the waters of Salt river from the head of the Blackfoot Fork, and a fourth lower and more broken range of mountains is crossed near the open valley of Bear river.

Tracing the tributaries of the Snake to their sources, it may be seen upon the sketch that they all rise in a higher divide than any crossed by a direct western line from the South Pass, and that a mountain chain, from which run out the spurs of the northern system, breaks down towards the south into lines of country which divide the waters of Green river from its tributaries, the Labarge and Fontenelle, and present the junction of Smith's, Thomas', and Solos forks of Bear river.

All the last named streams take rise near the corresponding sources of the waters of Lewis' Fork. The main chain to which I have referred, extending east and west, is at too great an elevation to permit practicable wagon routes over it, and the engineering study of the country developed the necessity of a passage of the great side ranges by the location already described and designated upon the map.

Passing south, the country soon becomes a broken region, covered with sage or with a scanty pasturage on the water courses. In the north, on the contrary, the whole space is well wooded, fertile, and abundantly grassed. A detour north serves location regarding grade, and near the head of Green river by inconsiderable deflection a very level route may be found, which, from the South Pass to the valley of the Great Snake and Bear rivers and to the plains of the Great Basin, presents no obstruction to the favorable passage of railroads. It has been thought expedient to lay out the wagon road further south than this extreme northern line, which would head the great valley of the Upper Colorado.

All the railroad routes designated upon the sketch have been examined and statistics gained of their character. They are very favorable passages of the grand Wahsatch mountain chain, and principal divide of the American continent near latitude 42° .

They are well timbered, and abundantly supplied with pure water and excellent building stone. Beds of coal, iron, and salt, and a spring of peculiar mineral oil, which, by chemical process, may be made suitable for lubricating machinery, are found in their vicinity. In the opinion of the undersigned, the most objectionable of these routes is preferable to any hitherto explored near the 42d parallel.

Beyond the field of examination embraced in the programme of your instructions of ———, the following results may be offered, as gained by side reconnaissance :

A wagon route can be opened from the Devil's Gate (so called,) north of the entire Wind River mountain chain, and passing to Fort Hall by the upper waters of Snake river. It would extend through the excellent watering grounds of Wind river, and when graded, which could undoubtedly be done during one season, would afford the base of a system of military operations from the eastern frontier to Oregon and California, with an open and easily protected line towards the supply grounds of the Beaver Head and St. Mary's valleys.

It cannot be approached from the south save by a few passes, and these may be easily defended by a small body of men; whereas the present line of the old road must be protected by large forces of mounted rangers, the animals of which will eat off the grass of the route and embarrass the emigration.

The whole great influx of the northern population to the Pacific must for the present cease, unless some decided steps are taken during early winter for its protection. It may seem expedient, in view of the unforeseen contingency of Mormon hostilities, to amend the law of Congress directing the construction of the wagon road through the South Pass, or, by further appropriation, provide for the exploration and construction of the more northern line.

The geological resources of the whole region are of extraordinary character.

The following synopsis is a deduction from the results of exploration:

WORK ON THE WIND RIVER MOUNTAIN ROUTE.—1,000 days' labor in Sweetwater and Big Sandy cañons; bridge or submerged platform and dressed fords at Green river and New Forks, if deemed expedient for mail service during spring freshets; whole cost of work to turn off Hockaday's Cut-off and old road, twenty-five thousand dollars.....	\$25,000
Purchase and repairs of the Hockaday and Dempsey bridge, with sum for rendering free the bridges at Smith's and Thomas' Forks.....	6,000
Change of line over mountain by zigzags, or detour approach.....	15,000
	<hr/> 46,000 <hr/>

MAIN NORTHERN ROUTE.

Wind River mountain line, as above.....	15,000
Cañon approach at head of Piney and descent to valley of Labarge.....	10,000
Work at Thompson's Pass.....	20,000
Descent along Smith's Fork.....	5,000
Work at summit and descent along branch of Salt river.....	8,000
All other work.....	12,000
	<hr/> 70,000 <hr/>

MAIN SOUTHERN ROUTE.

Work in cañon of Muddy.....	\$8,000
Bridges at Bear river, upper crossing.....	8,000
Bridges at head of lake.....	1,000
Work on gulley at Martin's Pass.....	4,000
Work in 17 mile cañon, near Cache valley.....	30,000
Bridges at Bear and Malade rivers.....	20,000
	<hr/>
	71,000
	<hr/>

In the event of the suspension of Mormon hostilities, the work on the southern route could be done cheaper by contracts with the Utah population and sale to them of the materials of the expedition on hand than in any other way.

They are the ablest and most efficient managers and working men to be found in the central mountains.

Under the circumstances of the present war the exposure of the bridges and costly works of the long cañon to their molestations would be a serious contingency to encounter.

The cost of protecting these works by a military force cannot properly appear in this estimate. The probable refusal of the emigration to use the road when built has already been alluded to.

All these estimates are guided by apprehension of a decided, energetic, and united course of action on the part of the superintendent and command, and of such discretionary power being conferred on the chief of the expedition as will enable him to practice due economy in expenditure.

The sums named include subsistence for six months, with the transportation of it to Fort Thompson and the use of the government property now at that point.

The usual notes, journals, and scientific data obtained by exploration are in hand, and this preliminary statement, made in view of the directions of the superintendent, and in reply to your letter of November 21, properly precedes a full exposition of the results of the year's labor, and the office-work required for its arrangement.

As your letter of instructions to the superintendent gave me no authority over subsistence and transportation beyond the expression of my desire to obtain it, my departure from the frontier was delayed until the 15th day of June.

The whole work of the advanced corps of engineers was completed in sixty days, for it required thirty days to reach the field of labor.

I cannot close this report, therefore, without expressing my sense of the obligations I am under to the members of the party for their efficient and manly persistence in duties performed during a stress of physical and mental labor not ordinarily required.

I am, sir, with great respect, your obedient servant,

F. W. LANDER,
Chief Engineer, &c., &c.

Report of Superintendent John Kirk upon the western division of the Fort Kearney, South Pass, and Honey Lake wagon road, constructed under the direction of the Department of the Interior, 1857.

SAN FRANCISCO, January 4, 1858.

SIR : Upon my arrival in California I immediately set about organizing a party for the purpose of carrying out the designs embraced in your instructions dated May 1, 1857.

More time was required in procuring the necessary outfit than was anticipated, and, with utmost diligence, the expedition was not ready for starting until the 27th of June.

I determined to start with a full complement of men, well knowing that, in crossing the mountains, many would abandon the party and many prove worthless ; at the same time more work was supposed to be required on the road than our experience has since proved.

I set out with seventy-eight men, including the officers, five large ox wagons drawn by oxen, two smaller wagons drawn by mules, and a spring wagon for the instruments, also drawn by mules. The number of animals was as follows, viz : 58 oxen, 14 mules, and 8 horses.

The itinerary of the route gives the movements of each day. I proceeded by the most direct route from Placerville, my headquarters, to Honey lake, and from that place to the west bend of the Humboldt river. So far as the road between the latter places, in relation to grade or solidity of road-bed, is concerned, it has no superior during the dry season ; but, in the winter, the Mud lakes, without proper embankments, must be impassable for wagons.

It will be seen by the itinerary that the grass and water is not uniformly distributed along the route.

The survey of the Humboldt river has amply proved that it is the most direct and best location for a road from Thousand Spring valley to its western bend, a distance of about 250 miles.

The peculiar topography of the country prevents the location of any other route, without great expense, from the Great Bend to Thousand Spring valley. Even then the saving of distance would be small.

The successive mountain ranges that extend from the rim of the Great Basin towards its centre are perforated by this river, thus making a natural and easy road. Nearly the whole length of the stream is a fine, grassy bottom, whose rich alluvian invites the agriculturist and stock-grower, after a proper survey and assurance of protection from the Indians. It is well understood that the principal requirements of our emigrant road to California are water and grass ; therefore, for large cattle trains, the occasional springs and patches of bunch grass in the mountains cannot be depended upon.

It is believed that the experience of this season will correct the current opinion in relation to the pernicious qualities of the water of the river and the grass upon its banks.

Except at the lake and its vicinity we found the water good and the grass superior, both in quantity and quality. A little care exercised on the part of the emigrant in keeping his stock from the water

standing in occasional sloughs will save him much loss. From the examinations already made it is evident that the greatest difficulty in the road is between the west bend of the Humboldt and California.

Either of the present roads from the river literally cross a desert. It is proposed, then, to avoid this at the expense of distance. The object of the act of Congress seems to require that the approach to California should be over the best passable road, without deviating materially from the general route; hence, the terminus is placed "at or near Honey lake." By leaving the river at Big Meadows, 39½ miles below Lassen's Meadows, and crossing the broken range to the west over to the south end of Pyramid lake, it is believed that a good road can be got through the mountains.

Mr. Bishop, in his examinations about the end of Pyramid lake, reports that several passes were seen through which a road could be constructed; also, plenty of grass at the south end of the lake and along the Truckee river. From this place the road can connect with the long valley by passing up through the cañon which I examined the 31st day of July.

The distance from the river to Pyramid lake is about 55 miles; from the lake to the State line 35 miles; making 90 miles from the State line to the river. Adding, then, the distance of 39½ miles up to Lassen's Meadows, makes 129½ miles against 107 by the way of the Mud lakes, which makes a distance of 22½ miles in favor of the upper route in distance. The construction of a road over the proposed route would probably be one-third less than the other.

I beg leave to call the attention of the department to the outrages committed by the Indians during the past season on the line of my division. It will be seen that a number of persons have been murdered, much stock driven off, and other property destroyed. It is stated, and to some extent believed, that the whites were the aggressors. Such may be the fact, but, as is almost always the case, innocent persons have been the sufferers.

It is strongly suspected that these excesses were instigated by white persons, but I have no evidence that such is the case.

Military posts should be established, then, for protection of both parties; and unless some measures are taken for the protection of the emigrant, his family, and property, the overland travel by this route will be seriously affected. I would suggest the Stony Point Meadows, on the Humboldt, and the City Rocks or vicinity, as proper locations for posts. Both places are favorable resorts for the Indians; of the advantages of the latter place, other than this, I am not qualified to report. But at the Stony Point Meadow every facility is at hand for their establishment which a country of this kind is likely to afford.

The estimates for the construction of the road will be found in the able report of the engineer.

This, with the itinerary, will furnish, it is believed, the necessary information for which the organization was designed. The economy of my operations will, I trust, compare favorably with others of similar nature.

There has been no attempt at display, nor any extravagance permitted. Upon our arrival at Placerville all the men were discharged,

except the engineer corps, and the stock was placed upon a ranche in the Sacramento valley.

I remain, sir, most respectfully, your obedient servant,
JOHN KIRK.

Hon. JACOB THOMPSON,
Secretary of the Interior, Washington, D. C.

FORT KEARNEY, SOUTH PASS, AND HONEY LAKE WAGON ROAD—WESTERN
DIVISION.

Report of Francis A. Bishop, engineer, to John Kirk, superintendent.

SAN FRANCISCO, January 4, 1858.

SIR: In obedience to your instructions, I have the honor to submit the following report and maps of the survey made under my direction between Honey lake and the City Rocks.

I deem it unnecessary to enter into an elaborate statement of the topographical features, geology, and natural history of the country through which our line runs. The explorations of Colonel Frémont and Lieutenant Beckwith extended over the greater part of the country traversed by our survey, and all the necessary information of that character is furnished by the admirable reports of those gentlemen. After a general description of the country, I shall confine myself to such details as have a direct bearing upon the location of the road.

Beginning near Honey lake, the line of road follows the northern margin of the Great Basin and crosses near its eastern terminus, the dividing ridge separating the waters of the Great Basin from the tributaries of the Columbia river.

The topographical features of the adjacent country, for the whole distance, are nearly the same.

Three great ranges, the West Humboldt, the Humboldt, and the Goose Creek mountains, which converge towards the centre of the Great Basin and in the vicinity of the line—the two former immediately to the south, and the latter crossing it.

Between these principal ranges are numerous smaller ones, many of them isolated, but bear in the same general direction. At their bases are small dry valleys covered with artemisia, or forming white mud bottoms destitute of vegetation.

The Humboldt river, rising in latitude $41^{\circ} 15' 30''$ north, longitude $114^{\circ} 51' 31''$ west, flows westerly for a distance of two hundred and forty-seven miles, and, excepting occasional small springs, is the only water in the northern line of the Great Basin.

It is only along this stream that a road can be constructed combining the advantages of distance, grade, natural road, and a plentiful supply of grass and water.

In making the estimates the line has been divided in four divisions: The first extending from the 120th meridian, at Rush valley, to the Lassen's Meadows, on the west bend of the Humboldt river; distance of 107.09 miles. The second extends from Lassen's Meadows to

Gravelly Ford; distance of 132.54 miles. The third extends from Gravelly Ford to the Humboldt Wells, 104.50 miles. The fourth division, from the Humboldt Wells to the City Rocks; distance 92.80 miles. A fifth division has been added, extending from the Lassen's Meadows southwesterly to the west end of Truckee cañon; distance 141.32 miles.

The topographical positions of various camps, in latitude, have been very accurately determined.

The observations were taken by the sextant; but they have been sufficiently multiplied to give satisfactory results, and agree very nearly with the traverse.

In our observations for longitude we have not been so fortunate; Lassen's Meadows is the only place satisfactorily located. The traverse, however, was connected with places in Carson valley, the positions of which had been well determined.

I regret my inability to furnish a profile of the line; my barometers were either broken or worthless previous to my arrival at the initial point, and we are thus deprived of the invaluable information derived from a well conducted set of meteorological observations.

The method of construction called for by the estimates is simple and unpretending. The aim of your engineer is the construction of a good road, carried out on the principles of true economy, but at no time forgetting its purposes or importance. A natural road is to be found nearly the whole distance, and no engineering difficulties are encountered. The courses and distances have been very accurately taken. The location of the road in some places will be subject to the modification of constructing engineer. Mounds have been erected at intervals along the line, but nature has with more permanence marked the route. The system of bridges and culverts is unexpensive, and the quantity of rock excavation small.

At the crossings of the various dry, gravelly ravines which only drain the surface water during the rainy season, the banks will be sloped to a proper grade and no culverts will be required.

The width of the embankment is estimated at 24 feet on the top, with slopes of $1\frac{1}{2}$ horizontal to 1 in altitude. The bridges will be of wood, and the timber will be obtained from the Sierra Nevada and Goose Creek mountains. The culverts will be of stone, and five miles is the average distance of suitable materials from the line. The estimates of each division, after a description of the localities requiring labor, are arranged in a tabular form. The calculations are on the basis that the labor and supplies for the whole work will be drawn from California.

First division.—Commencing at the boundary line between Utah Territory and California as determined by me.

The road passes over a steep, stony hill from Rush Creek valley into Smoke Creek bottom; a bridge 15 feet in length will be required to cross Rush creek. Side grading will be necessary on the hill.

The crossing of Smoke creek, in the valley, requires another bridge 40 feet long. Those in Smoke Creek cañon will not require bridging; the bottom of the stream wide and solid. The cañon itself requires but little work.

Crossing several low ridges, the road descends to the valley of the Mud lakes. No work is necessary until reaching a slough near Deep springs, where some embankment will be needed.

From this place to Granite creek no labor is required. Immediately beyond Granite creek the road crosses Mud lake, where eight miles of embankment four feet high is considered necessary. No finer summer road can be found than this, but in the winter season it is covered with a thin sheet of water.

Between the Hot springs and Rabbit Hole springs the ground is undulating and several ravines cross the road. Both excavation and embankment will be necessary.

From Rabbit Hole springs to Lassen's Meadows the road is generally good, but some excavation will be required at the springs on the hill beyond, and on the dividing ridge two miles west of Antelope springs. A culvert is also required between Antelope springs and the river.

Estimate for the first division.

Locality.	No. of cubic yards.	Cost per yard.	Nature of work.	Amount.
Rush Creek hill	2,847	\$0 35	East excavation	\$996 45
Slough at Deep springs.....	500	35	Embankment	175 00
Mud lake	162,704	40	do	65,081 60
Between Hot and R. H. springs.	8,566	35	Excavation and embankment	2,998 10
Rabbit Hole springs.....	2,160	35	do	756 00
Rabbit hill, beyond	4,300	35	do	1,505 00
Dividing ridge	2,935	35	do	1,027 25
Rush and Smoke Creek.....	(2 bridges)	20 00	Per foot—35 feet	700 00
Between Antelope spring and river.....	(1 culvert)	-----	-----	600 00
Total.....	-----	-----	-----	73,839 40

Second division.—Commencing at Lassen's Meadows, west bend of the Humboldt river. For 15 miles the ground over which the road passes is broken by dry ravines; the soil is light and friable, and some excavation will be required in the ravines.

Thence to the Big Bend of the Humboldt the road is sandy, and ascends and descends several sandy bluffs. At the bend of the river a bridge 20 feet in length is required to cross a small stream coming in from the north.

Thence to the range of mountains called the Pah Utah and Shoshonees Line no work is required. In crossing this range, though low, some excavation is necessary.

Between this place and Stony Point three culverts will be wanted. The road is level and solid. At Stony Point the road passes over a stony spar; no excavation required. In Stony Point meadows adjacent to the point, the ground is low and a one-half mile of embankment will be necessary.

In crossing the meadows some embankments and three culverts are required. Road to foot of the hill west of Gravelly Ford, solid and of superior quality. In crossing the hill to the river excavation will be required.

Estimate for the second division.

Locality.	No. of cubic yards.	Cost per yard.	Nature of work.	Amount.
To Pah Utah line.....	7,332	\$0 45	Earth excavation.....	\$3,299 40
Do	4,155	45	-----do.....	1,869 75
Stony Point.....	2,400	45	-----do.....	6,080 00
Stony Meadows.....	10,500	45	Embankment	4,725 00
Hill west of Gravelly Ford...	9,166	45	Excavation	4,124 70
			Six culverts, at \$600....	3,600 00
Total.....				18,698 85

Third division.—Commencing at Gravelly Ford, opposite the ford some rock will require moving. The road ascends the range for about half the distance through a deep ravine in which is more rock; the remainder of the distance over the hill earth excavation.

No bridge is required at Maggies' creek nor at the creek a short distance eastwardly; both are shallow and have a firm bottom. After crossing the plain the road enters Frémont's cañon; some rock is to be moved here.

Thence to the two hills near the north fork of the Humboldt, there is a good solid road; these hills require excavation. No bridge will be required at the north fork of the Humboldt; the banks are low and the bottom solid. At station 681 the line crosses a small branch of the Humboldt; a bridge 50 feet in length and some embankment will be required.

Between the last mentioned point and Humboldt cañon some rock and earth excavation will be necessary.

Estimate for the third division.

Locality.	No. of cubic yards.	Cost per yard.	Nature of work.	Amount.
Hill opposite Gravelly Ford..	4,380	\$0 55	Earth excavation	\$2,409 00
Do.....do	700	2 50	Rock	1,750 00
Gravelly Ford hill.....	34,100	55	Earth excavation	18,760 50
Do	650	2 50	Rock	1,625 00
Frémont's cañon	14,131	55	Earth excavation.....	7,772 05
Do	500	2 50	Rock	1,250 00
Hill near North fork.....	6,188	55	Earth excavation.....	3,403 40
At station No 681.....	4,420	55	-----do.....	2,431 00
Humboldt cañon	1,477	55	-----do.....	812 35
Do	200	2 50	Rock	500 00
			Bridge, 50 feet, at \$30..	1,500 00
Total				42,213 30

Fourth division.—Commencing at the Humboldt Wells.

From this place the road crosses the open plain, and ascends the dividing ridge between the Wells and Thousand Spring valley; road-bed solid; excavating required on this ridge.

Then descending into the valley, and crossing over good ground, it passes into Well Spring valley, thence over the divide to Goose creek; this divide is a large plateau.

The descent to Goose creek is favorable, but some excavation will be required. Instead of following the survey over the ridge again to the creek, the estimate is for a short route, which at present is impassable on account of loose boulders. A small bridge, twenty feet, will be required; after leaving this cañon, a short distance brings us to the line again. Proceeding through the large cañon, which requires but little work, we follow Goose creek down to the foot of the mountains. A bridge will be required to cross a small stream that flows into the creek from the south.

Some excavation required at different places along the creek.

The bulk of the labor on this section is at the Goose Creek mountains; a good grade can be obtained without more than ordinary difficulty. From the summit of the pass to the City Rocks the road descends gently into a wide plain; some little excavation will be required here to pass some small dry ravines. No further work required.

Estimate for the fourth division.

Locality.	No. of cubic yards.	Cost per yard	Nature of work.	Amount.
To Thousand Spring valley...	5,870	\$0 60	Earth excavation	\$3,522 00
From Rock spring to Goose creek	1,375	60	.....do.....	825 00
Cañon on Goose creek.....	2,470	60	.....do.....	1,644 00
Along Goose creek.....	4,420	60	.....do.....	2,652 00
Goose Creek mountains.....	27,400	60	.....do.....	16,440 00
Do	1,200	2 50	Rock	3,000 00
Bet. Summit and City Rocks.	1,375	60	Earth excavation.....	825 00
			2 bridges, 40 feet, at \$20.	800 00
Total				29,708 00

Fifth division.—The line of survey has been extended from Lassen's Meadows to Carson's valley for the purpose of testing the longitudes. An estimate is appended from the meadows to the west end of Truckee cañon. The road passes down the Humboldt to the south end of the lake, a distance of 68½ miles.

The ground for a road-bed excellent. A bridge, 100 feet in length, to cross a deep slough 20½ miles below the meadows, and also some excavation is required at the same place. Thence to the Truckee river the road is good, excepting heavy sand for the last five miles. The cañon, 26½ miles in length, will require considerable labor; and, to avoid bridges, the road should be carried up the south side of the river.

The quantity of rock excavation, however, is not large. The entire length of this division is $134\frac{1}{2}$ miles.

Estimate for the fifth division.

Locality.	No. of cubic yards.	Cost per yard.	Nature of work.	Amount.
Slough, 20 miles below Lassen's	1,375	\$0 35	Earth excavation	\$481 25
Bridge, 20 miles below Lassen's			Bridge, 100 feet, at \$30	3,000 00
Truckee cañon	68,333	35	Earth excavation	23,916 55
Do	2,000	2 50	Rock	5,000 00
Total				32,397 80

Summary of cost of construction.

First division	107.09 miles.....	\$73,839 40
Second division	132.54 "	18,698 85
Third division	104.50 "	42,213 30
Fourth division	92.80 "	29,708 00
Total	436.93 "	164,459 55
To the cost of construction add for contingents ten per cent. ...		16,445 95
Superintendence and engineering		7,000 00
Making the total cost.....		187,905 50

The above estimates are considered ample for the construction of a first rate road. In attempting to avoid the too common error of under-estimating the cost of the work, I have been careful not to reach the other extreme.

The locality, transportation of provisions, and materials, have met with a careful consideration, and the sliding scale of prices has been fixed in accordance with the result of these calculations.

I regret my inability to make more side examinations, but the movements of the train were so rapid that my time was entirely occupied in locating the road; and, on our return, the animals were too much disabled for such purposes.

The line of survey commenced at Honey lake, 22.17 miles westerly from the California boundary, which makes the distance from the former place to the City Rocks 459.10 miles. The distance from Lassen's Meadows to Genoa, in Carson's valley, is 175.36 miles.

Specimens of rocks, from along the line, have been collected; also of the soil, along the Humboldt, and the different varieties of grass seeds.

A delineation of the line on a scale of one mile to the inch is given, also a reduced map on a scale of 1. to 360,000 of nature. The latitudes are deduced from observations made by myself; the longitudes,

with one exception, are from the traverse. My attempts at chronometric longitudes failed, from the inefficiency of the instrument.

It will be observed that the magnetic variation increases in going from the Honey lake to the City Rocks from $16^{\circ} 15''$ east, to $17^{\circ} 20''$ east—contrary to the general law of magnetic variations. This fact, I believe, has been already noticed, but I have not the authority at hand.

A large amount of information, embracing the minute details connected with the survey, can be found in the field notes which accompany this report.

In connexion with these notes much credit is due my assistants, Messrs. Thomas J. Arnold and Reed Bigler, who were in immediate charge of the line.

Their prompt and efficient services, which on all occasions was cheerfully and promptly rendered, are duly appreciated, and I beg leave to return most sincere thanks.

In closing this report it may not be improper to make a few remarks on the results of our surveys as bearing on the question of the feasibility of the construction of a railroad from the central portion of California to the Great Basin. I am aware that the consideration of this question may be regarded, to a certain extent, as foreign to the immediate objects of our organization. The importance of the construction of a railroad from the waters of the Mississippi to California, and the general attention which is now drawn to the subject, would of itself be sufficient apology for the introduction of any information in regard to it. But it may fairly be presumed that the construction of the wagon road is only preliminary, and designed to assist in the construction of the railroad, and therefore, I trust, the remarks I may make may not be inappropriate.

The surveys we have made anterior to and in connexion with the wagon road explorations have made us familiar with the country between the valley of the Sacramento and the Great Basin; and we are satisfied that an easy and practicable route for a railroad connecting them can be obtained. The proposed line would, on leaving the level plain of the Sacramento valley, follow up and near the south fork of the American river to Slippery Ford; thence piercing the sierras by a tunnel of moderate length, it would enter Bigler Lake valley, and follow its banks and the valley of Truckee river, through which the waters of the lake empty into the Great Basin, until the general level of the basin is attained.

There is good reason to believe that no formidable engineering difficulties will be encountered in carrying a railroad from this point to Salt Lake City, or to such a point south of it as will connect with either Stansbury's or Frémont's route, to the States on the Atlantic western frontier.

From the present terminus of the Sacramento Valley railroad, at Folsom, to Lake valley, the distance by the proposed line of railroad would not vary far from 100 miles, and the elevation is 5,900 feet; thence to Truckee meadows is about 45 miles, and the descent is 1,200 feet.

It is not believed that there will be much difficulty in distributing

the ascent of the sierra into nearly uniform grades. The average rise to be overcome is so much within the maximum surmounted by locomotives on many railroads, that the possibility of obtaining practicable grades may be safely admitted.

Snow never falls either at Slippery Ford or at Lake Bigler in sufficient quantities to form any serious obstructions to the use of the road at all seasons.

In descending from Lake Bigler, the line would be carried nearly on a level with the lake until it arrives at its northern extremity, and the greater part of the whole descent must be distributed in about 25 miles between that point and Truckee meadows, giving a grade of say 50 feet to the mile. Truckee meadows are properly within the Great Basin, and the reports of the surveys made by order of the United States government all coincide in showing that no serious obstacles exist to crossing it with a railroad thence in the direction, or to the south of Salt Lake City.

In my opinion, fewer difficulties present themselves in the construction of a railroad on the line indicated than have been surmounted on almost every one of the great roads which cross the Apalachian range.

All of which is most respectfully submitted.

FRANCIS A. BISHOP,
*Civil Engineer Fort Kearney, South Pass,
and Honey Lake Road, Western Division.*

JOHN KIRK, Esq.,
Superintendent.

Table of geographical positions—latitudes.

Place.	Latitudes.	Remarks.
	° ' "	
Camp north end of Honey lake.....	40 21 16	By sun and Polaris.
Rush valley	40 33 07	By traverse.
Lassen's Meadows	40 41 44	By sun and Polaris.
Big Bend of the Humboldt.....	41 0 34	By Polaris.
Gravelly Ford	40 34 06	By Polaris.
Mouth of Humboldt cañon	41 12 51	By Polaris.
Humboldt Wells	41 15 30	By traverse.
City Rocks	42 3 15	By meridian alt. sun.
Do.....	42 2 16	By traverse.
Sink of Humboldt.....	39 56 15	By Polaris.
Truckee Meadows, west end of Buttes...	39 28 34	By Polaris.
Genoa, Carson valley.....	39 1 10	By Polaris.
Do.....	39 0 2	California boundary survey.

Table of geographical positions—longitudes.

Place.	Longitudes.	Remarks.
	° ' "	
Camp north end of Honey lake.....	120 17 51	By traverse.
Rush valley	119 59 19	Do.
Lassen's Meadows	118 16 51	By observation.
Do.....	118 17 30	By traverse.
Big Bend of Humboldt.....	117 33 02	Do.
Gravelly Ford	116 23 53	Do.
Mouth of Humboldt cañon.....	115 1 56	Do.
Humboldt Wells	114 51 31	Do.
City Rocks.....	113 44 33	Do.
Sink of Humboldt.....	118 42 26	Do.
Truckee Meadows, west end of Buttes....	119 44 47	Do.
Genoa, Carson valley.....	119 49 42	California State boundary survey.

Report of Superintendent F. W. Lander upon the central division of the Fort Kearney, South Pass, and Honey Lake wagon road, constructed under the direction of the Department of the Interior, 1857-'58-'59.

WASHINGTON, D. C., January 20, 1859.

SIR: In pursuance of the directions of your letter of December 7, 1858, I have the honor to transmit a report and map of the central division of the Fort Kearney, South Pass, and Honey Lake wagon road.

Very respectfully, your obedient servant,

F. W. LANDER,
Superintendent, &c., &c.

HON. JACOB THOMPSON,
Secretary of the Interior.

NARRATIVE OF PROGRESS OF EXPEDITION.

Your instructions to organize an expedition at some suitable point on the Missouri river, and to continue the construction of the Fort Kearney, South Pass, and Honey Lake wagon road, were carried out by the selection of Independence, Missouri, as a starting point, where was stored some of the property of last year's expedition.

The expedition left Independence on the 29th day of April. The actual progress of the march commenced at Fort Leavenworth on the 4th day of May. The expedition was equipped for fast service, and, in addition to the tools and appliances of construction, carried only one hundred days' provisions for the outfit. A contract was made at Fort Leavenworth with S. E. Ward, the sutler of Fort Laramie, for a train of provisions to be delivered at the latter point early in July. Prior to reaching Fort Laramie large numbers of destitute men were met upon the road. They were discharged teamsters and individuals who had left Camp Scott on the opening of spring. As the expedition, with the exception of Colonel Hoffman's, which had started a month earlier, was in advance of all other trains, I was compelled to feed and shelter these destitute and starving men. On reaching Fort Laramie a Mexican train was encountered loaded with flour, kiln-dried meal, and *frijoles*, or Mexican brown beans. The opportunity thus offered of turning to advantage the number of laborers who were destitute and seeking employment along the road, and of carrying the work you intrusted to my charge to more immediate completion, was embraced, by the purchase of the freight of this Mexican train. It was bought at prices much lower than the usual rates of the country, and cheaper than I could myself have brought supplies from the States. Fresh oxen and wagons having been purchased for the purpose of moving these provisions to the mountains, the new train was placed in charge of Mr. B. F. Burche, who was directed to forward it with as much celerity as might seem practicable. These arrangements were all perfected during the one day's halt which the expedition made at Fort Laramie. It arrived at the South

Pass, a distance of 950 miles from the starting point, and the commencement of the work, on the 14th day of June. A block-house was immediately constructed, and the tools and provisions of the advanced train placed in it. The best mules and wagons were then despatched back to Fort Laramie in charge of Alexander Mitchell, who was directed to bring up the remaining portion of the Mexican supplies and the Indian goods transported by Mr. Ward. A smaller party, under the direction of Charles Evans, was sent to Fort Thompson, on Wind River, to collect and bring to the line of the work such tools and appliances of the last year's expedition as might still remain serviceable. John Justus, the wagon-master of the last year's expedition, whom I had been fortunate enough to engage at Fort Laramie, was despatched to Salt Lake City for men to work upon the road. The engineers, with a detached party, commenced their work upon the base line of the route, and upon such reconnaissances and side surveys as the limited amount of transportation which I was enabled to furnish permitted their attempting. On the fourth day after reaching the South Pass, and after concluding these arrangements, I started in advance upon the line of the new road with the small train that remained. The party with me consisted of the lumbermen and bridge builders, hired in the State of Maine, for cutting out the heavy timber upon the line and for erecting such bridges as might be required. I was also accompanied by the employés who had joined the train during its march. The rate of 15 miles per day was kept up from the broad plain of the South Pass to Piney cañon, of the Wahsatch mountains. At Piney cañon the first hard work of the division was encountered. Through this difficult section a narrow road-way only was built, and the first range of the Wahsatch mountains crossed by cutting out the timber which lined the summit of the section to Labarge creek. The party continued its progress up the open valley of Labarge creek and crossed the main or great range of the Wahsatch mountains to Smith's Fork, cutting out the timber, but making only a narrow road-way, arriving at Smith's Fork on the 10th day of August. From Smith's Fork, which is the great tributary of Bear river, it crossed the third mountain range and arrived on Salt river, the principal tributary of the Great Snake River of the North, on the 21st day of August.

During this period the train of Mr. Burche and those of Alexander Mitchell and Charles Evans had arrived. John Justus had also brought to the work 47 employés from Salt Lake City, the latter chiefly Mormons. The engineering party, under the direction of Mr. John Lambert, had fixed with accuracy the position of some of the principal points on the road and completed some important side reconnaissances. Messrs. William H. Wagner, first assistant engineer, and J. C. Campbell, general assistant, had in the last named duty done themselves great credit by the discovery of a route towards the south partially explored by my party of last year, and had also tested the work by an excursion towards the valley of the Snake. A reorganization also took place in the engineering corps, which led to marked efficiency and progress, the conduct of which places me under peculiar obligations to William H. Wagner, R. L. Poor, and Melchior

M. Long. The small road-way broken by the advanced party was widened by placing regular forces of laborers along the line, weekly supplied with provisions from the fort which had been erected in Piney Cañon by Mr. B. F. Burche after his arrival there. From the limited amount of my transportation I was compelled to make a reconnaissance for the location of the road with one companion, a mountaineer named Peter Gabriel, to whom I am much indebted for his self-reliance, determined energy, and courage.

As it was at this time necessary for me to visit Salt Lake City, not only to carry out your instructions regarding the last year's expedition, but also to procure money to pay off employes, as the work approached completion, I left the main working parties of the line in charge of J. C. Campbell, B. F. Burche, and William West, and gave to Mr. Wagner the important duty of reconnaissance in advance from the western Wahsatch mountain range, towards the head of Ross' Fork of Snake river. All these gentlemen performed their duties to my entire satisfaction. I was accompanied to Salt Lake City by Mr. John H. Ingle, disbursing clerk, who has been of great service to me during the entire progress of this and last year's expeditions. We returned on the 7th day of September, after a rapid trip, with a pack party of two men, through the unfrequented trails of the Bear river and Malade mountains. During my absence, and while in Salt Lake City, I learned that the western Snake Indians had attacked the mail and stopped emigrant parties in Malade valley, and near Goose creek mountains. As it was necessary to carry the survey of the road to the last named point, and also to pass a portion of the wagon road employes, who at the end of the season had been promised a passage to California or a return to the States, and preferred the former, I now organized a party of five picked men, and accompanied by the engineers, Wagner, Poor, and Long, and Mr. Campbell, went forward to the end of the division, and visited these Indians, and completed the survey and location of the road. On my return, the work of the division being completed, with the exception of such minor details as could be profitably left in charge of Mr. Campbell, and as circumstances directed this course as the most expedient one to pursue, suitable caches were made of tools and appliances, the parties called in, and the expedition prepared for its return to the States. The circumstances which led to the return of the expedition to the States, rather than to the wintering of it in the mountains, are as follows:

The Crow and Shoshonee Indians having broken out into open war in the north, did not permit of my risking or exposing the large stock of mules of the expedition at the camp selected as the wintering ground of last year's expedition, on Wind river. Every point near Salt Lake City suitable for wintering stock had been occupied by Mormons, the army, or by the large trains of transportation contractors. Forage was at such rates and prices at Salt Lake City as to preclude its being purchased for this expedition. All articles of supply not possessed by my own train were held at exorbitant prices. The oxen of the expedition were fat, and could be sold at their original cost. The mules were in such excellent condition as to be able to make a trip to the States without serious loss. The articles of supply needful for the

ensuing year could be brought up by the mule train in the spring at mere nominal cost, as compared with the prices demanded by the spring transportation contractors for furnishing them. In addition to these facts, as the road was completed, with the exception of that dressing up necessary after the spring freshets, and before it was trodden by the emigration, there was no reason for remaining in the country. But beyond all this, some of the most excellent employes of the train had been hired at high rates of pay for peculiar services, and engaged under the idea that it would take eighteen months to construct this work, and that they would be furnished transportation home or to California on its completion. I had, therefore, either to keep up their pay and subsistence during the winter, and give them transportation in the spring or to return them to the settlements. My winter provisions were well stored at Fort Laramie, and being within 300 miles of the work would answer for the ensuing summer. In addition to all these reasons, which render the matter conclusive in my own mind, it was absolutely necessary that I should consult you on the subject of Indian difficulties liable to arise from the location and construction of this new road across the herding and camass grounds of the Shoshonee and Pannack tribes. The direction of a portion of the appropriation remaining unexpended for the purpose of obtaining the good will and kindness of these Indians, or the propriety of a new appropriation for the same end, is referred to in that part of my report embraced under the head of "The Indians." Should my views in this respect be adopted by you, and carried out, a portion of the return wagons will absolutely be required for the transportation of presents for these Indians. Under the weight of all these circumstances, and as the amount of work ordered by your instructions had been accomplished, and I had received no further directions from the department, I brought the expedition to the States, and discharged the employes at St. Joseph's, Missouri, on the 17th day of November last. Mr. J. C. Campbell, who remained in charge of the Mormon employes, took with him to Salt Lake City a small amount of transportation, which he has been instructed to dispose of or to winter there, as may seem to him most expedient, and to await your instructions for spring service or such as you may order me to carry out. In closing this narrative I desire to express my obligations to John Justus, James Snyder, Edward Yates, C. C. Wrenshall, and the employes who remained with them, exposed on the grassed islands of Platte river, in charge of weak stock, during the terrible storm of thirteen days, encountered by the expedition on its passage through eastern Nebraska, when coming to the States. Careless travellers having burned the grass along the route, it became necessary to move the expedition faster than was deemed expedient to drive some of the tired stock. The party which remained with the mules and horses left behind covered them during the night with their own blankets, and kept them alive until a return train was sent out with a supply of forage. Mr. James A. Snyder is also entitled to be mentioned for having remained in charge of the supply stations of the mountain work, often without a companion, in exposed situations at the edge of the Crow and Pannack country. I have given the names of the mem-

bers of the expedition to whom I am particularly indebted a prominence in this public statement, because success has only been achieved by their hearty co-operation, energy, and obedience. Many of them were hired at much lower rates of pay than they could have obtained on the border by not going upon the work. I also take this opportunity of stating my appreciation of the excellent employés, all of whom have sustained me in carrying out your instructions.

Construction.—Amount of work done.

Miles of grading.	Cubic yards of excavation.	Total cubic yards of excavation.	Miles of rock excavated.	CLEARING.		Remarks and locality.
				Miles heavy pine.	Miles of willow.	
2½	4,560	4,562	-----	-----	1	Between South Pass and Piney Cañon.
4½	8,797	13,359	½	½	3	In Piney Cañon.
	651	14,010	-----	-----	-----	Fort Piney.
	243	14,253	-----	1	-----	Between Fort Piney and foot of mountain.
3	5,865	20,118	-----	3	-----	Foot of mountain to Labarge creek.
½	243	20,361	-----	1	2	On Labarge creek.
3½	6,516	26,877	-----	1½	1½	From Labarge to road's leaving first branch of Smith's Fork.
½	243	27,120	-----	½	-----	First branch of Smith's Fork to summit of mountain.
4½	9,286	36,406	100 yds.	4½	-----	Between summit of mountain and Main Smith's Fork.
1	1,955	38,361	-----	½	3½	Along Main Smith's Fork.
4	7,820	46,181	½	4	-----	Between Smith's Fork and Salt river.
½	489	46,670	-----	-----	½	Salt river.
2	3,910	50,580	½	10	-----	Between mouth of cañon and West's camp.
6	11,730	62,310	-----	-----	½	West's camp to main emigrant road.

62,310, total number of cubic yards of excavation, of which 25 per cent. is loose rock and ledge.

1 mile of rock removed.

23 miles of heavy pine clearing. The pine timber extends over about two hundred miles of the route.

11 miles of willows cleared.

Estimate of cost of expedition from April 1, 1858, to December 1, 1858.

Amount expended.....	\$67,873 12
Value of property on hand and available for use, viz:	
Transportation.....	\$16,797 84
Camp equipage, &c.....	2,498 57
Provisions	4,051 59
Debts of old expedition and not chargeable to the present one.....	4,264 35
	<hr/> 27,612 35
	<hr/> 40,260 77

WASHINGTON, D. C., *January 7, 1858.*

SIR: Above please find the estimate of the cost of the expedition for the eight months ending November 30, 1858.

Very respectfully, your obedient servant,

JNO. H. INGLE,
Disbursing Clerk.

F. W. LANDER, Esq.,
Seperintendant, &c.

Property of expedition and employés ; where situated.

The following extracts from the report of Mr. J. C. Campbell explains the situation of the stock and government property in his charge at Salt Lake City.

Extract.—"I have sold six yoke of oxen, two yoke at \$100 and four yoke at \$90. I have now on hand fourteen (14) mules, three (3) horses, and seven (7) head of cattle. The stock is in excellent order, but everything is enormously high here. November 26, 1858."

Wagons, harness, provisions, arms, tools, &c., as per schedule A, on file.

Property cached by J. C. Campbell, as per schedule E, on file.

Mr. Campbell retains Edward Williamson, Isaac Frappe, and Frank Truchet, all excellent mountaineers, subject to dismissal or retention, as he may think proper.

Cached in fort at Piney Cañon, tools, for which see schedule C, on file.

In charge of C. H. Miller at Fort Gilbert, South Pass, Rocky mountains: tent, provisions, tools, &c., as per schedule I, on file.

Mr. Miller is directed to take barometrical observations during the winter, and to collect such information as will undoubtedly be valuable to the country. His reports for October and November have been received.

At Fort Laramie, receipt being taken from S. E. Ward, sutler: provisions, wagons, stock, &c., as per schedule E, on file.

At Troy, Kansas Territory, in charge of William H. West, arms, saddles, &c., as per schedule F, on file.

With Mr. West are A. Mitchell, C. C. Wrenshall, E. L. Yates, Jerome Boles, Anthony Cosgrove, and the four Mexican employés.

At St. Joseph's, Missouri, in charge of Cogwill & Co., receipt having been obtained: wagons, harnesses, arms, blankets, &c, as per schedule C, on file.

At Washington city, John H. Ingle, disbursing clerk; James Ingle, commissary; William H. Wagner, R. L. Poor, and Melchior M. Long, engineers.

The Engineering.

The engineering corps of the present season was a very small one. The amount of money expended has been almost exclusively devoted to the carrying out that clause of your instructions which directs "the most vigorous prosecution of work on the wagon road."

The following extracts from a report of Mr. John Lambert, engineer, and the report of Mr. Wm. H. Wagner, first assistant engineer, refer to the engineering:

Extract from Mr. Lambert's report.

"The unusual agreement of the following results for latitude at this camp will be sufficient excuse for asking attention to them; as they compare fairly with the results obtained with larger instruments, and published as specimen work or illustrations in astronomical books:

By "Antares" twice, July 21 and 22...	42° 31' 50".95 (both the same.)
By Ophiuchi.....	42° 31' 54".4
By Ophiuchi.....24th and 25th...	42° 31' 50".66 (both the same.)
By Altair.....25th...	42° 31' 51".5
Mean.....	<u><u>42° 31' 51".52</u></u>

Had it not been for the prevailing cloudy nights and an accident to the watch used before I could get a complete set of "Luna Distances," I have no doubt that I should have obtained results as reliable for longitude before this time. I made an attempt to observe an eclipse of the first satellite of Jupiter, which is now above our horizon in the morning, but the glasses in the party are too feeble for distinct vision in presence of the moon. In the hurry of immediate computation at night, I mostly omitted some small corrections, such as for mean declination, height of barometer, &c., but which leave no error perceptible in the general maps, these also I propose to correct in Washington."

Report of Wm. H. Wagner, first assistant and acting engineer.

WASHINGTON, January 19, 1859.

SIR: I have the honor to submit the map and meteorological notes collected during the progress of the expedition.

The map contains the results of surveys and reconnaissances of the first and second expeditions through this section of country. The astronomical observations for latitude were made by Mr. J. Lambert and Mr. R. L. Poor, with great accuracy, along the new worked road. The want of proper instruments and the short sojourn in any one place prevented observations being taken for longitude, but the utmost care has been taken to supply their place by exact measurements.

In connexion with the survey, several important reconnaissances have been made by Messrs. Poor and Long and myself. This side work, resting upon the base line of the surveyed route, completes in some measure that of last year.

Twenty-three (23) meteorological observations were made at Aspen Hut, and ninety (90) at Piney Fort, by Mr. Snyder. Twenty-seven (27) readings were made at the mouth of Piney Cañon, and one hundred and forty along the line of the new road. These last were taken at each important break of the surface. It is impossible to note on the map all the heights thus obtained for fear of confusing it. In computing these heights, and to get reliable results, due care was taken to observe the directions given in the work of Lieutenant Abbot, topographical engineer, in reference to the corrections to be made in barometrical readings. The formulæ used in computation were those of Guyot, as published by the Smithsonian Institution.

Since the departure of Mr. Lambert from the charge of the engineering work of this road, I have been most ably assisted by Messrs. Campbell, Poor, and Long, and am indebted to them for their cheerful and energetic aid in carrying out the work entrusted to my charge.

I am, sir, very respectfully, your obedient servant,

W. H. WAGNER,
First Assistant Engineer in charge.

F. W. LANDER, Esq.,
Superintendent, &c.

The barometrical data and the journals, note books, itineraries, &c., of the expedition, from which the results offered are made up, are on file in the office, but not now transmitted, as they would increase the size of this report to unreasonable limits.

Description of the old roads westward from the South Pass, and the amount of emigration over them in the year 1857.

The following extracts from Assistant Engineer John F. Mulloney's report of last season, who was placed in charge of surveying and examining the old roads while I was making the reconnaissances of the

upper unexplored country, afford valuable information. My own examinations of the old emigrant roads were made in 1854, and led me to suggest the propriety of further explorations prior to building the overland wagon road.

Extracts from Mr. Mulloney's report.

"The line cannot well be changed for the better from the South Pass to the forks of the road, near Little Sandy creek. It is an even and broad gravel surface. From the forks of the road it passes over a gravel surface mixed with sand, affording little grass, save in the early part of the season, and which soon withers during the summer months. From the forks toward Crow creek, (a small stream so called near the base of the Bear mountains,) it is mainly an elevated table land, a smooth surface of alluvial deposit, mixed with fine sand and gravel, of arid and sterile appearance, and yielding nothing but stunted sage. In crossing this desert, both man and beast suffer from the long, tedious marches, without water or grass. The wheels of the wagons sink deep into the dusty soil, and the hauling is slow and hard. The strong winds which prevail here during the summer months sweep over the level plains, whirling the loose deposits into thick clouds, obscuring the sight, and filling both eyes and nostrils with dust. The hot, dry air parches the lips and throat, and even makes respiration difficult.

"This waste, therefore, has long been known as one of the most dreaded parts of the road travelled in crossing the Rocky mountains. Of the several routes across it I consider none worthy of improvement, unless with the view of dividing the emigration. To do this, experiments might be made by sinking ordinary wells at suitable points to obtain a supply of water. If this attempt should not be made, I dismiss the subject of the whole of these routes from any further consideration, as possessing nothing in their favor to recommend them compared with the Wind River mountain route, by way of the New Forks of Green river, reconnoitred and examined by yourself."

EMIGRATION OVER THE SOUTH PASS ROUTE BY THE OLD ROADS.

I furnish the following interesting schedule from the report of Mr. B. F. Ficklin, of my advance exploring party of 1857. It gives information of the number of wagons crossing the Green river ferries, and a description of the roads over the ungrassed regions west of the South Pass, and the desert towards Slate creek.

Extract from B. F. Ficklin's report, August 15, 1857.

The Mormon road.—This road crosses at the Mormon ferry of Green river.—(See map.) It is one hundred and fifteen miles from the South Pass, on this route, to Crow creek, the connecting point of all the roads. Eighty wagons crossed this ferry to date, only twenty of which belonged to California emigrants.

The Kinney road.—It is one hundred and thirteen miles from the

South Pass to Crow creek. With the exception of the last six miles it is a hard, gravelly, gently rolling, and unexceptionally good road. Very little grass; sage for fuel.

Over two hundred and twenty wagons have crossed the Kinney ferry for California up to date. The numerous loose animals not counted by the ferrymen, as they are generally crossed by swimming.

The Sublett road.—This, the northernmost of the old emigrant roads, crosses the desert by a distance of fifty-two miles, and has a side line to the Desert spring; water of the Desert spring slightly impregnated with sulphur and alkali; the spring is thirty-two miles west from the Big Sandy. To Crow creek, by the main Sublett road, one hundred and seven miles; by the spring route, one hundred and twelve miles.

One hundred and fifty wagons had crossed at Sublett's ferry. No account kept of loose stock.

Davis' road.—It is one hundred and eleven miles from the South Pass to Crow creek by this route, which is preferred by emigrants.

Five hundred and sixty wagons have crossed at Davis' ferry up to this date; number of loose animals not noted. The Mormons' estimate for loose cattle driven to California the present season is seventy thousand.

The different ferries at Green river are what are called rope ferries. The boats are badly and roughly constructed. They are built of pine timber, and are not over thirty feet long, making it necessary to pull wagons into and out of the boats by hand. This is a tedious job. The cattle are forded, or in high water swam over, attended with risk both to cattle and drivers. The price charged for ferrying varies from three to six dollars per wagon, depending on the stage of water. The Kinney and Mormon ferries are owned by Mormons, and are in Utah Territory.

The above was a very small emigration, less than one-third what it was in 1854, when I passed along this route from Oregon. Apprehension of a Mormon war reduced the number of emigrants.

The tolls of bridges and ferries are as follows on the South Pass road:

Laramie river.....	\$2 00
North Platte.....	5 00
Five other small bridges.....	10 00
Bear river ferry (Owens' road).....	4 00
Green river.....	4 50
Total.....	<u>25 50</u>

Twenty-five cents per head is paid by cattle drivers for loose stock, in the highest stages of water.

In a large emigration, fifty thousand dollars is a small estimate for tolls paid by overland emigrants. We cannot estimate loss of stock by the old road at less than twenty per cent. of the whole number driven.

Mr. Miller's report of the travel of October and November, 1858, is given below, the latter going to Salt Lake, and consisting of freight trains:

SOUTH PASS, ROCKY MOUNTAINS,
Gilbert's Station, November 30, 1858.

All snow falling previous to November 20 did not remain long on the ground. The snow in the pass is now six inches deep. It is three inches at Green river.

The travel past this station in October was—

Outfits (various kinds).....	59
Men	838
Women and children.....	9
Horses.....	91
Mules.....	369
Oxen.....	4,851
Wagons.....	490

In November—

Outfits.....	36
Men.....	528
Women and children.....	—
Horses.....	100
Mules.....	207
Wagons.....	107
Oxen.....	932

As my party was off the line of the old roads from May until October, I cannot give the amount of travel, which was large.

EMIGRANT GUIDE.

The following schedule, made up in the simple forms in use by overland travellers, will be of service to emigrants :

TO EMIGRANTS.

Gilbert's station, at the South Pass, (last crossing of the Sweetwater river,) is the point at which you had better leave the old road, for fear of getting lost among the different camp trails. Gilbert will direct you.

You must remember that this new road has been recently graded, and is not yet trodden down; and, with the exception of grass, water, wood, shortened distance, no tolls, fewer hard pulls and descents, and avoiding the desert, will not be the first season as easy for heavily loaded trains as the old road, and not until a large emigration has passed over it.

All stock drivers should take it at once. All parties whose stock is in bad order should take it, and I believe the emigration should take it, and will be much better satisfied with it, even the first season, than with the old road.

	Intermediate distances.	Total number of miles.
From Gilbert's station to Aspen Hut ----- Good grass and water. If the grass has been eaten off by the Salt Lake trains, go—	3. 50	-----
To Long's creek ----- Here you have a good camp, the grass on the hills being excellent. Willows on creek, aspen or mountain cottonwood to left, pine timber to left, crossing good gravel bottom.	2. 20	5. 70
From Long's creek to Clover creek ----- Good grass and water.	2. 23	7. 93
From Clover creek to Garnet creek ----- Good water and fine grass; aspen timber. From this creek to the Sweetwater it is a rolling country, with fine bunch grass. Pine timber as you approach the river.	3. 14	11. 07
From Garnet creek to Sweetwater River crossing ----- You will find this a good camp. Fine grass and heavy pine timber a short distance up the creek to right.	4. 95	16. 02
From the Sweetwater to crossing of Poor's creek ----- Excellent grass and fine timber to left of road. Good camping places all the way for nine miles, the road following up the stream for that distance.	1. 59	17. 61
From Poor's creek to Little Sandy creek ----- Good grass; abundance of pine timber. Four miles from crossing the road descends into a large grass plain, called Antelope meadow. A great many antelope here. Camp near the rocks, where you can have cedar for fuel.	11. 66	29. 27
From Little Sandy to Big Hole of Big Sandy ----- A good laying up place. A large valley; abundance of grass and pine timber.	5. 33	34. 60

SCHEDULE—Continued.

	Intermediate distances.	Total number of miles.
To crossing of Big Sandy.....	5. 00	39. 60
Hard pitchy road. A steep pitch to go down to the river.		
From Big Sandy to Grass Spring.....	8. 15	47. 75
No wood, but fine grass and water; abundance of sage for fuel.		
From Grass Spring to New Forks of Green river.....	18. 56	66. 31
This distance can be shortened by striking toward a clump of timber to the right and finding good camping grounds; then by following down this stream to the left a short distance you strike the road at the crossing, which is good. There is a large island in the centre, and the stream on each side is from twenty to thirty yards wide. In the spring it is from three to four feet deep. You had better raise the beds of your wagons. Timber on island and western bank.		
From New Fork to Green river.....	5. 51	71. 82
From this point you can strike south, and in four miles come to Piney creek, with good grass, and plenty of timber for camps. This, however, can only be done late in the season, for in the spring it is marshy, and you had better keep the beaten trail, on which you will find water and grass enough even for laying up.		
From Green river to White Clay creek.....	8. 00	79. 82
Alkali along its banks, but clear running water in the bed of the creek.		
From White Clay creek to Bitter-root creek.....	5. 18	85. 00
Good grass; large willows on its banks for fuel.		
From Bitter-root creek to north fork of Piney.....	10. 32	95. 32
Willows on banks; one mile to left pine and cottonwood timber.		
To middle fork of Piney creek.....	3. 00	98. 32
Good grass; large willows for fuel.		
From Middle Fork to mouth of Piney cañon.....	1. 54	99. 86
Cañon from a quarter to one and a half mile wide.		
From mouth of cañon to Piney Fort.....	7. 70	107. 56
The road through the cañon crosses the creek eight different times; all the crossings, however, are good. You will find several camping spots in the cañon, between its mouth and Piney Fort; you had better lay over at Piney Fort, as you have excellent grass, and a block-house, with corral attached. The country for thirty miles beyond is thickly timbered, which will render it necessary for you to keep careful watch of your stock. You should move as rapidly as possible over to Salt river. After leaving Piney Fort the road passes over a ridge and crosses a small creek within half a mile; thence crosses mountain—		
To Labarge creek.....	5. 19	112. 75
Road follows up creek for half a mile, crosses and passes along low ridge for a short distance, when it strikes the—		
Crossing of small creek in valley.....	2. 55	115. 30
To crossing of another small creek.....	. 43	115. 73
Good grass.		
To crossing of Spring branch in valley.....	1. 39	117. 12
Enclosed by high ridges. After crossing another small creek road enters—		
Labarge valley.....	. 89	118. 01
Good grass on hill to right.		
To junction of Labarge and Spring creek.....	1. 84	119. 85
Road from this point lies over a mountainous country.		
From Spring creek to first branch of Smith's fork of Bear river...	2. 57	122. 42
You travel along this stream for one and three-fourths of a mile.		
Good grass in timber.		

SCHEDULE—Continued.

	Intermediate distances.	Total number of miles.
To Smith's fork of Bear river.....	7.44	129.86
Valley narrow; thick growth of willows half a mile up this stream to right from where the road strikes it and further. You will find good grass on the hills and in the valley. Road follows down Smith's fork and crosses—		
Little Beaver creek.....	2.04	131.90
From Little Beaver creek to spring near the top of the mountain. Before reaching this point you pass through a small body of aspen timber. Be careful here to keep good watch of your stock, as this timber is very thick with Indian trails running north and south, upon which your stock is apt to stray, and you will not be able to recover them. You are now leaving the friendly Indians and reaching the Pannack country. Treat them kindly or you may have some trouble. Road ascends hill for one-fourth of a mile, then descends gradually. From here to old road grass is very abundant in all valleys.	1.88	133.78
To Salt River valley.....	8.91	137.69
Good grass.		
To crossing of creek.....	1.04	138.73
Gravel bottom; road follows up valley—		
To crossing of Small Spring creek.....	2.50	141.23
Valley widens, and is covered with excellent grass.		
To Salt River crossing.....	5.95	147.18
Half a mile northeast of crossing Janvier's fork of Salt river, coming in from the right, unites with the main stream.		
To west branch of Salt river.....	4.83	152.01
Good grass. Valley at this point about four miles wide; road runs along valley.		
To Smoky creek, (mouth of cañon).....	6.47	158.48
Road crosses creek and enters cañon, which is one and a fourth mile long.		
To Red Willow creek.....	2.00	160.48
You will find good grass in the bottom.		
To Salt Bottom.....	3.00	163.48
Surface of ground in many places white with pure and excellent salt. A good laying up place to salt your stock. Water clear and fresh; grass very fine. Here the road leaves valley and ascends bench, crossing several spring branches, keeping, however, the general direction of the valley.		
To Kinni-Kinnick reek cañon.....	4.00	167.40
Cañon one mile long, cross creek twice. After crossing seven spring branches and two small creeks you come—		
To Noon creek.....	3.08	170.56
You then cross two spring branches and come—		
To Flat Valley creek.....	2.43	172.99
Large valley of fine grass.		
Crossing of another creek.....	1.75	174.74
Good grass all the way—		
To Large Grass valley.....	2.23	176.97
In which is a lake several miles long. You travel up valley, on edge of lake, crossing two sloughs. At end of valley you come—		
To a creek.....	10.27	187.24
Which is a branch of Otter Spring creek. Fine grass.		
To Otter Spring creek.....	1.38	188.62
Good grass.		
To spring in valley.....	7.85	196.47
Water brackish; good grass.		

SCHEDULE—Continued.

	Intermediate distances.	Total number of miles.
To branch of Blackfoot.....	. 87	197. 34
Good grass.		
To Blackfoot river	1. 85	199. 19
Crossing good ; fine grass. You leave river here to right.		
To Granite creek	3. 53	202. 72
Good grass ; willows on creek.		
To crossing of creek	1. 30	204. 02
To point where road leaves Blackfoot river	4. 79	208. 81
To Thistle creek	1. 82	210. 63
One mile to right a small grove of aspen timber ; grass good.		
Road crosses two small creeks.		
To head of Portneuf river	4. 89	215. 52
Aspen grove and good grass at crossing.		
To road from Soda Springs	1. 24	216. 76
To entrance of cañon	1. 12	217. 88
Spring branch runs through this cañon, which is three-fourths of a mile long ; grass good.		
To small stream coming in from the left .....	. 89	218. 77
To two small streams emptying into Ross' fork	9. 75	228. 52
Fine grass.		
To Emigrant road .....	. 94	229. 46
Thence follow old Emigrant road, and in one-eighth of a mile cross a small branch. Road level.		
To Ross' Fork	1. 47	230. 93
Cross creek and enter cañon, which is about one and a half mile long		
To Snake River valley and fork of roads	11. 18	242. 11
You take right hand road to Fort Hall, and the left to bridge on Ross' Fork. The latter is the main or short road.		
To bridge on Ross' Fork	2. 38	244. 49
Good grass. Road good.		
To bridge on Portneuf river	8. 00	252. 49
Fort Hall is in sight from this point, Portneuf mountains to left. Fine grass, but little timber in valley.		
To stream in Portneuf valley .....	. 23	252. 72
To slough in Portneuf valley .....	. 42	253. 14
To road from Fort Hall .....	. 60	253. 74
To Fort Hall and Salt Lake road	3. 15	256. 89
Road from bridge on Ross' Fork lies over a very level country, sometimes in valleys, but principally on bench land. Willows and grass on creek.		
To Pannack river	6. 50	263. 39
Good grass.		
To Irvin's old fort	4. 36	267. 75
To Big Spring	6. 99	274. 74
At all the above points you touch Snake river. This spring is about thirty feet in breadth, and is formed of innumerable small ones.		
To American falls of Snake river	1. 93	276. 67
You keep along river, and one mile on cross a steep ravine. Timber.		
To crossing of creek	3. 33	280. 00
To crossing of creek	1. 66	281. 66
To ravine .....	. 83	282. 49
Rocky island opposite mouth of ravine. Fine grass ; some pine timber. Within the next three miles you cross three ravines with timber and grass.		

SCHEDULE—Continued.

	Intermediate distances.	Total number of miles.
To crossing of creek	5. 79	288. 28
Timber and grass. You cross a ravine in half a mlie.		
To Fall creek	2. 91	291. 19
Steep bank on west side. Timber and grass.		
Leaving Snake River bottom to right.....	2. 03	293. 22
To Raft Creek crossing	6. 16	299. 38
Good grass; willows for fuel.		
To second crossing of Raft creek	3. 60	302. 98
Good grass.		
To third crossing of Raft creek	11. 11	314. 09
Good grass.		
To forks of road.....	8. 81	322. 90
Junction of this road and Hedspeh's cut-off.		
To crossing of small stream	3. 50	326. 40
Road crosses two small streams within the next half mile.		
To fork of Raft creek	2. 84	329. 24
Good grass; willows for fuel.		
To crossing of creek	10. 74	339. 98
Good grass; no timber.		
To crossing of small creek	2. 00	341. 98
To entrance of Rocky cañon.....	2. 33	344. 31
Cañon three-fourths of a mile long.		
To City rocks	1. 23	345. 54
Good grass and camp ground on small Spring branch. Thence the usual route to California.		

Table of distances from Fort Leavenworth to Gilbert's station at the South Pass, (last crossing of the Sweetwater river.)

	Intermediate distances.
From Fort Leavenworth to Fort Kearney.....	294
From Fort Kearney to Fort Laramie	335
From Fort Laramie to Gilbert's station, (South Pass).....	270
Total number of miles	899

LOCATION.

The following extracts from my report of last year, when chief engineer, made to W. M. F. Magraw, superintendent, on his arrival at the South Pass, presented the subject of location, as I was then able to weigh it:

"Sixteen mountain passes have been explored, the topography of the Northern Wahsatch mountain chain thoroughly defined, and several practicable wagon routes discovered, with very important cut-offs and connexions. * * * Of these wagon routes the two principal ones are a southern and a northern line, at the extreme verge of the limits of explorations named by the department. * * * Of the two main routes either can be built within the limits of the amount appropriated by the department for the work of this division. To either of them, therefore, may be applied the word practicable;" both of them cannot be built for the amount of the appropriation. The act of Congress, as interpreted by the department, is "to construct a wagon road from the South Pass to City Rocks, on the shortest practicable route." The shortest practicable route is the southernmost of these two main lines, and is seven days nearer travel to the City Rocks than any of the old emigrant trails. That it is the shortest practicable route is the engineering deduction; but that it is the best route for an emigrant road is denied by many of the most experienced traders and employes of overland trains, to whom I have described its facilities and disadvantages. The northern route, on the contrary, is but a few days travel shorter than the present emigrant roads, but is so abundantly furnished with grass, timber, and pure water, with mountain streams abounding with fish, plains thronged with game, and so avoids the deleterious alkaline deposits of the south that it may be described as furnishing all that has been so long sought for through this section of the country—an excellent and healthy emigrant road, over which individuals of small means may move their families and herds of stock to the Pacific coast in a single season, without loss.

"This northern route also passes in the vicinity of what, in my own belief, will prove to be the very best northern railroad line across the continent, when all routes are properly located and surveyed by practical building engineers of such experience in all varieties of construction, of deterioration and wear of way, as to comprehend the contingencies and requirements of the interesting problem of a railroad through 2,000 miles of uninhabited country.

"In the choice between these routes, beyond the engineering presentation of surfaces, acclivities and distances, the word practicable is susceptible of many definitions; for in some measure repeating conclusions, a straight or the shortest route may be practicable for the passage of emigrant wagon trains, but sparsely grassed, and one which would not be selected by emigrants, if built by the department. It may mean a short line as a mail route of easy grades, and if supplied with forage stations suited to the rapid transit of mule and horse teams—a route, too, to be easily supplied with these forage stations from its passing in the vicinity of the Salt Lake settlements—this would mean

the southern route. Here stands, too, the definite interpretation of the act of Congress by the department: 'The shortest practicable route from the South Pass to City Rocks.' No one can deny that the southern route is the shortest; it is highly practicable; it is the cheapest: for, by access to the Utah populations, it can be more quickly and advantageously built than the northern, or in fact than any other, and in proportion to its length is as well supplied with grass and water as either of the old emigrant roads. Even if the projectors of the wagon road bill advocated it as an aid to the overland emigration, and if for this purpose we should more properly select an excellent road-way of détour, abundantly furnished with wood, water, and grass, and presenting no natural obstructions which cannot be removed within the limits of the appropriation, and one particularly adapted to the great claims of the ox-team emigration, that class of population yearly flooding the great plains, and adding so much to the strength and prosperity of our Pacific possessions, yet we are not called upon to go so far behind our instructions, or to assume responsibilities not necessary to be borne."

The result of this communication was that I was instructed to go to Washington and confer with you on these subjects. You directed me to build the northern route, and it has been constructed the present season.

A review of the statements of my last year's report now becomes necessary. During my absence important changes appear to have taken place in the views which have led to the passage of appropriations for constructing emigrant wagon roads. If it is to be held that the new road is to be used as a winter mail route across the continent, then it is not properly placed. It is especially and emphatically an emigrant road, so located as to avoid the tolls of bridges, alkali plains, and deleterious and poisonous waters, and to furnish fuel, water, and grass to the ox-team emigration. And it is neither the very shortest nor the very best which would be selected for a winter route in the vicinity of the same parallel of latitude. The overland emigrants reach the mountain sections in the latter part of July, and pass over the adjacent sand plains during July and August. The chief difficulties and obstacles which they encounter arise from the extreme dryness and heat of the artemisian deserts. The passage of the line as located nearer to the base of the snow-capped mountains, in a more elevated region, richly grassed, and along the great summer trails of the Indians, is favorable to their health, the preservation of their stock, and gives them abundance of pasturage, with water at short intervals from mountain streams. These very streams, stocked with mountain trout, soon disappear, or become stagnant pools, after reaching the sand plains. A railroad from the South Pass toward the Pacific could make the passage of these sand plains over a more level country, or by détour would pass toward the north of the valley of Snake river by much lower passes than those which have been adopted for the wagon road, and it would encounter only one, and that one the very lowest of the Wahsatch mountain ranges, at a point where it breaks down into low foot hills, offering no obstacle to the favorable passage of a railroad line which could be built without a tunnel. The wagon road, on the

contrary, although not at a long distance from this line, has been carried along the base of the higher ranges, and over a country of easy slopes, but at greater elevation above the sea. As to mail facilities, a very excellent mail route—probably the best in that region of country, permitting a short connecting line with Oregon and Washington, through Salmon River valley, avoiding the Snow mountains—can be obtained north of the Wind River ranges to the great valley of the Snake, by a pass which is travelled in the winter by the Indians and mountaineers. A very good one also exists by the old emigrant wagon road. A third is that described in my last season's report, as above quoted, extending to Cache valley. This southern or Cache valley route would connect with the new line from Bridger's Pass, constructed by Captain Simpson, of the War Department, and is also much more direct towards California than any other route from the South Pass, north of the Great Salt Lake. The line explored the present year by Mr. Wagner, in completing my engineering work of last season, would connect with this southern route into Cache valley, and I have already received your instructions to build it with the tools and appliances remaining of this year's expedition. But if the Bridger's Pass road is found to be practicable, that is, supplied with water and grass, during July and August, for the passage of a large emigration, then the construction of this main southern route by Slate creek would enable the emigration to avoid the passage of the farms of the Mormon population, except at Cache valley, and relieve them from the great want of grass experienced by their trains in the vicinity of Salt Lake City. But from the Old South Pass road it would not prevent the emigration from travelling that terrible range of country extending from the South Pass to Slate creek; nor would it save them from the ferries of Green river and two crossings of Bear river, either by bridges or ferries. I can only say, therefore, that, although in reality a better road for an overland mail than the one which I have just completed, it is not so good for an overland emigration, unless that emigration takes the route by Bridger's Pass.

The question as to whether the emigration will prefer the Bridger's Pass route must be solved by knowledge of the grass and water on it late in the season. There is always water enough in the early spring, or before the emigration arrives, at the mountains in the small lakes and pools made by the melted snow.

RESOURCES OF THE COUNTRY.

All of the large valleys in the vicinity of the South Pass are suitable for grazing purposes, and many of them adapted for settlements. The elevation of this range of country has not prevented its occupation by the Mormons. Crops of wheat have been raised on the emigrant road at various points, even at so great an elevation above the sea as Independence Rock. On the headwaters of the Snake and Blackfoot rivers enormous crops of wheat and barley have been raised. The country in the more elevated ranges is very fertile, and the condition of the oxen, mules, and American horses of the wagon road expedition after their severe service of the season, the sale of these oxen at cost in Salt Lake City, and the successful return of the mules to the States,

are sufficient guarantees of the value of these mountains as grazing regions. The country has been improved by the Mormon population so far north as the valley of the Salmon river. Farms extend through Malade valley, and are considered very productive. The eastern Shoshonee or Wash-i-kee band of the Snake Indians and the Pannack of Snake River valley are adverse to communication with the Mormons, and will not permit them to settle upon their lands, at least at the present time. The Pannack tribe have repeatedly killed Mormon farmers and driven off their stock. The encouragement for the settlement of the country west of the South Pass, in the vicinity of the new road, either by the Mormons or by a Gentile population, would be of great service to the overland emigration. The new road touches only the northern extremity of the Mormon settlements at Blackfoot river, a tributary of the Snake, where, as previously stated, large crops of wheat are raised, but where a mill has not yet been erected. The new cut-off road which you have directed me to build into Cache valley, designated upon the plan by line II, will, however, pass near the Mormon farms, where flour can undoubtedly be purchased at low rates, and where the country is not yet so much taken up as to interfere with grazing facilities for the emigration. Nearly all this region is very heavily wooded, and the excellent pine and fir timber are so situated as to be easily transported by water. All the great tributaries of upper Green river have their sources in the foot-hills of the Wind River and Wahsatch mountains, and are heavily timbered with yellow pine. All the tributaries of the upper Snake river are likewise heavily timbered adjacent to the road. Should a railroad ever pass towards Salt Lake City, either by the Bridger's or by the South Pass of the Rocky mountains, this timber could be delivered on the line with great facility and at low cost. It can be furnished with equal facility in the passage of a railroad from the South Pass to the waters of the Snake river, and thence to the head of the Humboldt towards California, and by a branch road by the way of Salmon river, or the valley of the Great Snake, towards Oregon and Puget's Sound. In fact, if a forked road was built from any point near the South Pass, north of it or south of it, having termini at Puget's Sound and the Bay of San Francisco, no apprehension need exist regarding supplies of timber and fuel for the line for any number of years, either east or west, from these dense forests. Large quantities of excellent bituminous coal were discovered at distances of eighty and one hundred miles west of the South Pass. Supplies of coal were also discovered on Wind river. The quantity of mineral tar which exists in the vicinity of Wind river, known by mountaineers as the Oil springs, a variety of asphaltum or petroleum, would also greatly facilitate the working of a railroad. This substance is readily converted, by a simple chemical process, into lubricating oil, and the mere article of oil is a costly item of the running expenses of railroads. Excellent iron ore exists thirty miles north of the South Pass, and has been found in the mountains of the Great Basin, further south.

THE MORMONS.

In a previous report I informed you that on reaching St. Louis I was led to increase the size of the expedition from intelligence of the intentions of the Mormon population. This was prior to the departure of the Utah commissioners. I felt justified in this course from my own knowledge of this singular people and their peculiarities. The passage up the Platte and into the mountains was made without any difficulty whatever, so far as the Utah population was concerned. John Justus, my messenger to Salt Lake City to procure men, was enabled to proceed in the business of hiring them without interruption immediately on the arrival of Colonel Johnston's command. The greater part of the Mormons, however, who worked upon the wagon road came up after their return from the south, whither they had followed their leader, Brigham Young. I gave Mr. Justus particular instructions to ask no assistance from the influence of the leaders of the church in obtaining men, but to go openly among the people and state to them my intention to give them employment, without reference to their religion, citizenship, or nationality. Some of the Mormon bishops told members of the church that they would be turned out of it if they went to work for the United States government; at least I was so informed by these very men who, notwithstanding this caution, came up and aided in building the wagon road. I was assured by Ex-Governor Young, whom I visited while in Salt Lake City, that this was not the case, and that he would be very glad to have his people employed by me, not only because the work was one of public utility, but because it aided the people in getting a little money for the purchase of groceries and what they term "settlement supplies." The Mormons who worked upon the wagon road were very much pleased with their engagement, and returned to the city comfortably clad from the stock of clothing which had been taken to the mountains by the expedition. The existence of this Mormon population, and the supplies they are enabled to furnish, is a most important matter in making estimates for any public work to be carried on in that section of the country. They are very excellent laborers, many of them Cornish miners, who understand all sorts of ledge work, masonry, &c. The majority of the lower classes are trained in the use of implements of excavation, from the amount of picking and digging which is required in the building of the great irrigating ditches, and in the erection of the earth and rock fences by which the farms of the country are separated. They will prove of remarkable service should the proposed line of the Pacific railroad pass anywhere in the vicinity of their settlements. I paid them a dollar a day for work, but the next season I shall probably have to pay them at higher rates. Ex Governor Young told me that he would engage to find laborers and mechanics to build that portion of a Pacific railroad which should extend across the Territory of Utah. The Mormons are very anxious that a part of the appropriation for the building of a wagon road through the South Pass may be devoted to bringing the road in the vicinity of their city; and they assured me that if the road could be

made better in the vicinity of the city than it then was, nearly all the emigration would visit them for such supplies as could be purchased there. Governor Cumming also spoke to me in reference to the same matter, and I replied to him in writing, (the letter, I think, has since reached your department.) I have referred to this subject of carrying the road near the city in my remarks upon location. It would more properly be done as connected with the new road through Bridger's Pass. The measure suggested would undoubtedly prove of great service to the Mormon population, for much of the emigration, as is stated, does certainly pass through Salt Lake City, some of it wintering there.

THE INDIANS.

No difficulty occurred with Indians on the way up the Platte; a small party of horse thieves, supposed to be Pawnees, entered the camp during the night, about 25 miles east from Fort Kearney; they were fired upon by the guard, took to the water and crossed the Platte river. The Sioux also visited the camps, and were treated with hospitality and kindness.

After leaving the South Pass, on my passage west, with an advanced party, I met the whole of the great tribe of the eastern Shoshonees, under the direction of the celebrated Wash-i-kee. They were on their annual hunt near the headwaters of the Green river, surrounding antelope. The Indian presents which I had proposed taking to this tribe were then behind me in the train of S. E. Ward. Having with me a very fine herding horse, I presented him to the chief, and talked with him upon the subject which brought me to the country. Wash-i-kee's reply to what I said to him was very characteristic. He remarked, "that it was never the intention of the Shoshonee tribe, at least his portion of it, to fight the whites; that he had himself been fired upon by emigrants, but had always taught his young men that a war with the 'Great Father' would be disastrous to them. He said, before the emigrants passed through his country, buffalo, elk, and antelope could be seen upon all the hills; now, when he looked for game, he saw only wagons with white tops and men riding upon their horses; that his people were very poor, and had fallen back into the valleys of the mountains to dig roots and get meat for their little ones. They did not complain, however, for they knew they could not conquer the whites or drive them out of the country. He said he did not even propose to fight, notwithstanding the building of this new road would destroy many of their root grounds and drive off their game. Other Indians had told him that if he killed some whites the 'Great Father' would then send him a great many presents to keep him from killing any more. He wished me, however, to say to the 'Great Father' that his people were waiting to hear from him; that they did not stand with open hands that he might give them presents, but they hoped he would be just and treat the Snakes as if they were really his children, as the white men had so often told him he would do."

I told this heroic and manly chief, known among the mountaineers

by the term "The White Man's Friend," that he would obtain as much from the American government as if he endeavored to compel gifts by force of arms; that his course in the Mormon difficulty was worthy of admiration; his refusing to take part with or against the Mormons was sufficient proof that he did not desire war to the prejudice of any of the white people, and only wished properly to represent his tribe. I promised him nothing, because, if I failed to fulfil that promise, I should excite every feeling of a cruel and vindictive nature to its extreme of enmity. Although the Snakes or Shoshonees have probably suffered more than any other tribe from the passage of emigration along the narrow valleys of their rivers, driving out their game, it is a peculiar and very remarkable fact that they have hitherto received nothing in the way of presents from the American government, while the Sioux and Cheyennes, whose broad plains are stocked with buffalo, have been paid annuities for many years. A sum of from \$2,000 to \$5,000 might properly be used in this connexion with great advantage to the overland emigration, and perhaps to the prevention of one of those desolating Indian wars which have cost the government so much trouble and expense. A war once commenced may be considered as never closed; for the relatives of warriors killed will invariably, whatever may be the disposition of the chiefs of the tribe, cut off lone parties of emigrants and single men. It is part of the nature and religion of an Indian to take blood for blood; and although naturally cowardly, greater risks have been encountered by them for the purpose of making this sort of retaliation than is often attempted in the wars of more civilized nations. Although Wash-ikee declares his intentions to be friendly, the Snakes will be much injured by the passage of the new road by emigrants. The following extracts from Mr. Miller's report are worthy of note:

SOUTH PASS, November 8, 1858.

The Snakes are wintering on Wind river, and the last accounts from them say they are in a starving condition; they are at war with the Crows, and are afraid to go out to hunt for game. On the 27th of October they had a battle with a party of Crows, and killed ten. Wash-ikee is very much dissatisfied with the Crow agent, and says if Uncle Sam does not do better by him he will let his band steal from the whites all they wish. He says they are cheated every year. The Pannacks have burned Fort Thompson to the ground; they are wintering with Wash-ikee.

The new road in many instances follows the summer and fall trail of the Shoshonee tribe. The animals of the emigrants will destroy the grass in the valleys where the Indians have kept the pine timber and willows burnt out for years as halting places in going and coming from their great annual buffalo hunts, and I believe, even beyond the mere question of policy, that it would be a very unjust and cruel course of action for the government to pursue should we take the use of their lands without reimbursement to the tribe.

After passing the Shoshonee or eastern Snake tribe I entered the country of the Pannacks, a very dangerous, cruel, and vindictive race, intermarried with the Shoshonees, speaking a language closely simi-

lar, but with no regularly constituted chief, and only respecting the great Wash-i-kee, and sometimes joining his tribe in their excursions to the buffalo country east of the Rocky mountain range, or in wars against the Crows. The Pannacks hold the whole country from Blackfoot creek towards Fort Boisé, and extend north to the northern Snakes, or "Sheep-Eaters." After my working parties were placed in the main Wahsatch mountain range, being with Peter Gabriel, the mountaineer, some days' travel in advance of the pioneer train, laying out the road, I fell in with one of the outlying parties of the Paunack tribe. Both myself and my comrade could use the language of signs remarkably well, but neither could speak the Shoshonee or Pannack language well. The Pannacks had recently killed many Mormons and stolen their stock. It was a position of extremity with us, for a council of war was held, in which we were not permitted to join. The medicine pipe was smoked, and a discussion took place as to whether we should be killed or not, the Indians believing us to be Mormons. While the chief and the leading men were holding council I approached them, and, taking the pipe from the hand of the last smoker, smoked it myself, and told them, by the language of signs, that I had come a long way to see them, but that I could only hold a talk at my own camp, which was three days' ride back. At this time the women and the young men came forward, crying with loud voices, in the Shoshonee or Pannack language, "Shoot, shoot! they are Mormons." The nominal chief of this party, however, who is a temperate and quiet man, said that we had visited them in their camp, and that he and six of his best warriors would go with us and hear more; that we might possibly be Americans, and that, although his heart was very bad against the Mormons, he loved the children of his "Great Father," and should not permit any harm to come to them within the borders of his camp. He set out some roots and boiled antelope flesh, of which we partook. The same afternoon the chief, with six of his warriors, joined us and rode for three days to the main camp of my party, on the head of Beaver creek. Before reaching the camp I despatched Peter Gabriel in advance, who brought back "Shoshonee Aleck," a half-breed now in the service of Mr. Campbell at Salt Lake, an interpreter and reliable man. After his arrival the Indians were satisfied as to my character and my business in the country.

Staying one day at our camp, I returned to the tribe, made them a few trifling presents, and obtained their good wishes for the success of our enterprise by stating that the "Great Father" would not probably destroy their hunting and root grounds by the passage of an emigration without paying something to reimburse to them the extreme loss which they must thereby sustain. These Indians are very much under the influence of a celebrated prophet of the western Snake tribe, who reside in the vicinity of the old Hudson Bay trading post of Fort Boisé. Should I receive your instruction to do so, during the next season I desire very much to visit this noted prophet and confer with him through a good interpreter. He is a man of great influence among these dangerous tribes west of the Wahsatch mountain range, and perhaps this influence may be gained in behalf of the whites. I

consider him one of the most dangerous and desperate men now living west of the Rocky mountains, for the Indians have a superstitious reverence for him. He is extremely hostile to the Mormons. This noted partisan was the chief cause of the expedition against the Mormon settlement of Salmon river, which was attacked by the Pannacks and the Snakes on their learning that the American government had commenced war upon the Mormons of Salt Lake. Under the direction of this man the Pannack and a portion of the western Snake or Shoshonee tribe attacked the Mormon fort, killed many of the settlers on Salmon river, drove off all their stock, and broke up this settlement entirely. The most direct route from the South Pass to Oregon and Puget's Sound being through the Salmon river settlements, the advantage to emigrants from the fact that flour can be purchased there at low rates is one which cannot very well be surrendered, and any treaty or arrangement which could be made with this wild tribe, permitting the Mormons once more to occupy their fort and farms on Salmon river, would redound to the interests of the country. It is believed by the most reliable men in the mountains that, in the present unsettled state of the Pannack tribe, the first small emigrant trains which pass from Fort Hall towards Oregon will inevitably be attacked by both the Pannacks and the western Snakes. Even during my visit to this tribe information was brought to me that some young warriors had stolen several mules from a Mormon train which had come up to Fort Hall with provisions for the mountaineers there. I employed Ten-toi, a celebrated young Indian who was of service to my party last year, and was mentioned in my report to you, to endeavor to find these robbers, and, if he were successful in securing the mules, again to give them up to Mr. Campbell, whom I left behind, that he might take them to Salt Lake and return them to their Mormon owners. Ten-toi is a man of great influence in the country as a successful warrior, having distinguished himself in wars against the Blackfeet. He is not, however, a chieftain. An Indian known by the name of Le-Grand-Coquin, (The Great Rogue,) a term applied to him by the French half-breeds from his former horse-stealing proclivities, is the leading man among the Pannacks in the vicinity of Fort Hall or adjacent to our own line of road. I consider the Pannack and western Snake or Shoshonee tribes the most dangerous of all the Indians whom I have ever visited. I do not think the term "treacherous," as usually applied to Indian tribes, is always just. We can hardly say that a tribe is treacherous which definitely asserts, through its chief, that it will not permit the passage of white men through their country. It has been in the most manly and direct manner that these Indians have said that if emigrants, as has usually been the case, shoot members of their tribes, they will kill them when they can. They undoubtedly use all the means and appliances of Indian warfare, and, as barbarians, torture their prisoners; but if met with the true spirit of American energy, with kindness and justice, there is no difficulty whatever in approaching and subduing the worst elements of the Indian character; that is my opinion, after an experience of several years among them.

The western Shoshonees, termed by mountaineers the Sho-sho-kos,

hold the country west of the Pannacks, on the road to California. They are a very dangerous and warlike tribe. It is a well known fact that the western Shoshonees, of Humboldt River and Goose Creek mountains, have sometimes ventured to attack an equal number of overland emigrants. They fight with the utmost determination, and, with the advantages which Indians inevitably procure in assailing whites, have often been successful in the destruction of small parties of our overland emigrants. They generally assail them from the willows of Humboldt River valley. When I heard that these Indians had broken out into hostilities, had stopped the United States mail, and killed some of the emigrants who were, in small parties, endeavoring to reach California from Salt Lake City, I thought it proper to visit them, taking with me "Shoshonee Aleck," the interpreter, my engineers, Messrs. Wagner, Long, and Poor, Mr. Campbell, and the mountaineers Justus, Gabriel, and Williamson. On my way I procured the services of a leading warrior of the Pannack tribe, and by his kindness and discretion I was enabled first to obtain an interview with ten warriors, an outlying party of the band of Po-co-ta-ro or the "White Plume." The leader of these ten warriors told me that he would visit Po-co-ta-ro's camp in the mountains, but that the chief's heart was bad, and that he would listen to soft words from the whites. I sent by this messenger a few small presents to Po-co-ta-ro, inviting him to come to me and have a talk. He came with fifty-five mounted warriors, and treated me and my small party with the utmost respect and consideration. I have to place on record before your department the simple fact that this young chief, known to be hostile to the whites, received me with an attention which I have seldom known manifested by the wild tribes of the interior whom I have repeatedly met, from the very fact that I had thrown myself on his hospitality and kindness, without an escort or a large amount of presents, with full faith in the better attributes of the Indian nature. He said to me his tribe had received what he termed in the Indian language, so far as I reach the interpretation, "assaults of ignominy" from the white emigrants on their way to California; that one of his principal men had had his squaw and his children killed by the emigrants quite recently; that the hearts of his people were very bad against the whites; that there were some things that he could not manage, and among them were the bad thoughts of his young men towards the whites on account of the deeds of the whites towards his tribe. Many of the relatives of his young men had been killed, and nothing but the death of white men could atone for this; nevertheless, I had come to him like a man, and he would meet me like a man; that his father, "Big-um," (referring to Brigham Young, of the Mormon population,) had sent to him many presents, but he knew, for all that, that there was a greater man than Big-um, the Great Father of the whites, before whom Big-um was as a little finger to the whole hand; and much frightened, Big-um, with all his warriors, had run away towards the south when the blue caps, or soldiers, the bands of the White Father, came in sight; therefore, he knew and respected the power of the White Father, and that whenever he should feel certain that the White Father would treat him as well as Big-um did, then he would be the kindest friend to the

Americans that they had ever known. I told this chief that if after the conclusion of the present year I heard good accounts of him and his people, I would endeavor to bring to him full proof of the estimation of the Great Father of the whites, when I came to see him the succeeding season. The whole conclusion of this statement in reference to the western Shoshokos or Snakes is, that either out of a portion of the wagon road appropriation, or by the action of Congress, or from the contingent fund, as in your own view most expedient, a sum of money should be devoted to the purchase of presents to be donated to these Indians on my going into their country, that I may once more visit them and bring home to their uncultivated but stern and true natural minds, the fact that the disposition of this government is not to oppress or harass them, but to gain their confidence and win their friendship towards that nomadic population which must inevitably pass through their tribes on its way to California and Oregon.

The sum of \$10,000, covering presents and cost of transportation, would undoubtedly keep these tribes quiet. If no means are furnished, I think the expedition should move as an armed body; and, west of Fort Hall, detached parties never consist of less than twenty men; our side reconnaissances would be very limited, and cost much more than has hitherto been expended on them; and the whole work of next summer be carried on under the embarrassments which must inevitably occur. As to the emigration, the Indians often approach small trains and ask for food or presents, sometimes endeavoring to frighten the emigrants into giving them these articles. The emigrants resist, and often fire upon the Indians. Blood once shed, the next party of emigrants is almost sure to be attacked. During the season of emigration the whole trail is like a travelled highway—thousands of passengers being always on the road. Small parties of one or two men are passing and repassing in search of lost cattle and in visiting trains. They are necessarily very much exposed, and, in event of difficulty, are sure to be cut off, even when the tribes are not at open war with the whites. Should such an arrangement as I have proposed be made with these western Indians, (I refer particularly to both the Oregon and California roads,) as has been made with the Sioux and Cheyennes, it would prevent the recurrence of these difficulties in some measure, because the older men of the tribes would impress upon the young warriors the fact that the "Great Father" had paid for the passage of the emigration through their country. The tribes to which I refer are in eastern and northern Utah and southern Oregon.*

* I learn with great solicitude from the letter of a correspondent in Salt Lake City that difficulty is apprehended with the Loose Creek or western band of Shoshonees. These Indians, as I have stated in my report, are not under the direction of Wash-i-kee. The leading chiefs amongst them have a jealousy of him. They are more properly termed the Sho-sho-kod or Digger Indians. They are the Indians visited by me with a small party. They were visited after their attack upon trains and after robbing the mails. Their good faith and kindness were manifested by the first tribe or band sending runners the whole length of Humboldt valley, a distance of 400 miles, in order that thirteen of my men, unprotected and imperfectly armed, might, on their arrival, be passed through the various bands of this tribe in safety to Honey Lake valley, the country of the western Utes. Now that the Mormon war is over, and this new road is constructed, saving to emigration the tolls of the

Report of Superintendent James B. Leach upon the El Paso and Fort Yuma wagon road, constructed under the direction of the Department of the Interior, 1857-'58.

DECATUR, Illinois, April 13, 1858.

SIR: I left Washington, as ordered by the Secretary of the Interior, on the 5th day of February last, and proceeded with all possible despatch to the camp on the Cottonwood, Minnesota Territory, the winter quarter's of Superintendent Nobles. I found the men left in charge in fine health and spirits, the stock in good condition and improving. Upon my arrival at camp and learning the condition of things, I paid off and discharged all of the hands there except three, whom I left in charge of stock, &c. Upon making a neat calculation I found I had not sufficient funds in my hands to pay off the whole party, so I paid in full those who were discharged, leaving those unpaid who were left in charge of the camp, as also the chief engineer, Samuel A. Medary, and one James Gorman, who had left the camp a few days before my arrival. My vouchers, showing to whom and amount paid, I sent to Superintendent Nobles for his approval, together with account current and abstract, which I presume he has handed to you.

Hoping that you may find all correct, I am, sir, very respectfully, your obedient servant,

J. R. GOVIN,
Disbursing Agent. &c.

ALBERT H. CAMPBELL,
General Superintendent, &c.

WASHINGTON, D. C., January 29, 1859.

SIR: I have the honor to submit the accompanying papers relative to the operations of the El Paso and Fort Yuma wagon road, consisting of an itinerary of the movements of the commission, describing

ferries and bridges, and the passage of the alkali plains, with their deleterious waters, the South Pass route will be thronged as it always has been by emigrants seeking a passage to California and Oregon. Should any difficulty occur with these Indians, who can easily be held in check or managed by the disbursement of a few thousand dollars worth of presents; any difficulty from the mismanagement of agents who are not disposed to take the risk of going among them with small parties, meeting them at their own camp fires, smoking the pipe of peace with them, and gaining their confidence, or by military men acting under false impressions gained from those who are sometimes disposed to create Indian wars for the purposes of speculation, I shall feel that the exposure, immediately after these outrages were reported to me, of my own life and the lives of the few excellent men who accompanied me in my visit to this tribe, has been a foolish and useless risk. I made these Indians some few presents, all that I had at that time, as tokens of good will. They made me presents in return of equal value. I cannot but believe, should information reach your department conflicting with the views which I have expressed, that there is some misunderstanding which can readily be adjusted; and I offer my services in any direction which you may think it proper to order me on my return to the mountains, to prevent difficulties between the white men and the Indians on the emigrant route. I will take any personal risk which can well be imagined to prove my full faith in the candor and honesty of the Indians west of the Wahsatch mountains, when properly approached and made fully to understand the objects and the designs of this government.

the country as passed over, and length of marches, camping places, daily incidents, &c.; as also the report of the engineer of the road and accompanying maps.

Receiving my commission as superintendent of the road on the 22d of April, 1857, I was actively engaged for the ensuing two months in procuring the necessary supplies of wagons, animals, provisions, &c., and on the first of July following, the train left the Mississippi river opposite Memphis, Tennessee, en route for the initial point of the road at El Paso, Texas; passed through the central portion of Arkansas, the Cherokee and Choctaw nations; crossed Red river at Preston, and then by way of Forts Belknap and Chadbourne, through the northern portion of Texas to the Horsehead crossing of the Rio Peras; thence by way of Fort Davis to the Rio Grande, reaching El Paso on the 22d of October, 1857.

Working parties were immediately placed in the field and the improvements of the road, continuously carried on, were completed on the 1st of October, 1858.

During the summer of 1858 such portions of the outfit as were no longer necessary were disposed of in the valley of the Mesilla, and the remainder, after being carried to Fort Yuma in the execution of the work, was transported to San Diego, California, and there disposed of at auction on the 17th of October, 1858.

I would respectfully call the attention of the department to the estimate made by the chief engineer of the road in his report respecting the building of a bridge across the Rio Grande, and the lining of the tanks already made, in order to preserve them and make permanent the work already done. For this purpose a small appropriation added to the balance remaining unspent of the former one would be sufficient, and the carrying out of this project would be of immense service to the Mesilla valley, as also to the road, as it would insure a safe crossing on the Rio Grande at all seasons of the year, and impede the destruction of the tanks if not lined with something more substantial than clay.

I would also most respectfully recommend the establishment of a military post on the Rio San Pedro, somewhere about the mouth of the ——— cañon, as the valley must in a short time become a home for the farmer, and the main thoroughfare for the emigrant to California.

The affairs of the commission in California being arranged, I left San Francisco on the 20th of November, and reported myself in Washington on the 15th of December following. All of which is respectfully submitted.

I have the honor to be, your obedient servant,

JAMES B. LEACH,

Sup't El Paso and Fort Yuma Wagon Road Expedition.

Hon. JACOB THOMPSON,

Secretary of the Interior.

The El Paso and Fort Yuma wagon road being now completed, it may be necessary to make some remarks concerning the route not contained in the itinerary.

The whole line of road from El Paso to the Rio Gila, with very few ex-

ceptions, may be considered a plane level road; and the country through which it runs affords at almost every stopping place an abundant supply of wood for cooking purposes; good grazing is also plenty, and water may be counted on throughout the year to such an extent and at distances so arranged that the emigrant can never know the privation of that necessary.

In these particulars it shows its superiority over all the other roads to the Pacific, particularly for those who travel in large parties and take stock on with them. It may be well to observe that the best times to travel from El Paso to Fort Yuma are the months of September, October, and November, particularly for the farmer from the north and northwest, as he would be enabled to raise a crop at home previous to starting, and be able to arrive in California in sufficient time to raise his spring crop there; at the same time allowing himself sufficient time to recruit either on the Rio Grande or on the Mimbres, at either of which places he is always sure of a sufficiency of good water and grazing. These months are also the best, owing the mildness of the weather, which cannot be surpassed on any other road in the United States, an advantage which is not to be despised, and cannot fail to be fully appreciated by the emigrant.

There is no fear to be entertained from Indians on this route, as the Apaches and Mescahros are peaceably inclined towards Americans, in fact I know of no instance since my first operations on the road where Americans have been molested by the Indians. On the contrary, on several occasions they have been aided by them and supplied with provisions, all which goes to prove the advantage which this road possesses over all others for the emigrant.

On the Rio Gila grass is scarce, but in the months alluded to above, there is a sufficiency for any regular sized train, and an abundance of water.

It may be well to observe that although the Indians along the road are friendly to Americans and will not openly molest them, still a great deal of caution is necessary to prevent their stealing anything they may find hanging around camp, as they are very cunning and expert in petty thieving as well as on a large scale.

The same observations will hold good respecting the Pimo and Maricopa Indians; all that is necessary is care and caution, and all will go well.

JAMES B. LEACH,
Superintendent.

EL PASO AND FORT YUMA WAGON ROAD.

Report of N. H. Hutton, engineer, to James B. Leach, superintendent.

WASHINGTON, D. C , January 29, 1859.

SIR: I have the honor to submit the following hurried report upon the improvements effected in grade, alignment, &c., on the route of the wagon road from El Paso, Texas, to Fort Yuma, California; together with a few suggestions as to future improvements, and a brief memoir of the country passed through.

The region of country traversed by this route lies almost entirely within that territory recently acquired from Mexico and termed the "Gadsden Purchase," which, previous to the construction of the present wagon road, was traversed by a route opened at different periods by the parties of Colonel Cook, Messrs. Nugent and Hayes, the Mexican Boundary Commission, and Lieutenant J. G. Parke, United States Topographical Engineers. This route, opened as it was by different parties, with different objects in view, and merely "in transitu," could hardly be expected to have been either located on the most direct lines, or to have received much improvement of surface or in facilities for obtaining water. Particular attention was, therefore, given on the new road to such a location as would increase not only its directness, but the facilities for obtaining wood, water, and grass; without which no route, however level in surface or direct in alignment, could be made available for emigration.

The old road, leaving El Paso at the lower end of the "Gorge of the Rio Grande," passed, for seven (7) miles, through these narrows over the rolling rocky spurs of the Organ mountains, and debouching thence proceeded up the wide valley of the river, over an elevated bottom, well timbered and with light clay and sand soil. Crossing near Fort Fillmore to the right bank of the river, it passed through the town of La Mesilla, and thence over a low, rich, well cultivated bottom to the village of the Picacho, where it ascended the bounding "mesa" of the river by a steep rocky hill and turned its course toward Cook's Spring, passing over an elevated plateau region having a fine gravelly surface, covered in places with small fragments of porphyry and basalt, and which is traversed by three low volcanic ranges of hills, the wide open passes of which, however, offered but slight impediment to the passage of loaded wagons. This plateau ceasing within twelve (12) miles of the spring, the road descended, with an easy grade, into a low, flat, plain with a red clay and loam soil, sloping southward and extending westward to Cook's spring, (situated amid the foot hills of the western slope of the Mimbres mountains.)

Leaving this spring the road ascended a long, narrow valley, a distance of about one and a half mile, and crossing the Mimbres mountains by a favorable pass descended over a rolling slope to the Mimbres river, crossing it by a ford; and thence over a gradually

ascending plain, with a firm clay and gravel surface, to the "Ojo la Vaca," (situated in a low basin, on a rolling plateau, and surrounded by small conical hills, forming a peculiar feature in the landscape.)

Leaving this spring (or collection of springs) the old road made a series of rather useless bends toward the Burro cañon, passing over a rolling surface with a loose, light soil of red clay, sand, and gravel, and crossed the latter cañon, with a light descending and ascending grade, five miles south of the Ojo de Ynez; thence, passing over the long rolling slopes from the mountains on the north, it turned the southern terminal spurs of the Burro mountains, descended over a wide, gently sloping plain to the centre of the large basin called the "Valley of the Playas;" ascended an equally gradual slope, and crossing over a low gap in the extreme northern end of the "Pyramid Range," traversed a similar basin to the former one, and called the "Valley of the Lagunas;" and thence through a low pass crossed the Piloncillo range of mountains.

Between the points just mentioned, that is, between El Paso and the Piloncillo Pass, a distance of one hundred and eighty-four and eight tenth (184.8) miles, but one other general route presented itself as having any natural superiority to the old road above described. This route follows the line indicated as the railroad route on Lieutenant Parke's map. Leaving the Rio Grande, immediately in rear of the town of La Mesilla, it follows nearly a due west line, passing up a long trough or valley through the Florida Pass, and thence over the rim of the basin of the Valley of the Playas, and on to the Piloncillo Pass, without crossing a single range of hills or protrusions above the plain surface between the summit of the mesa, near the Rio Grande, and the foot of the Piloncillo Pass.

This route was thoroughly examined, and, though possessing undoubted superiority in grade and distance, was finally abandoned, for the reason that the obtaining a sufficient supply of water, though possible, was not within the limits of the instructions with regard to a proportional expenditure of appropriation, and, in consequence, the old road was mainly followed to the Piloncillo Pass; the exceptions being: Firstly, through the gorge of the Rio Grande for seven miles above El Paso, where, by a change of location nearer to the river bank, several objectionable hills were avoided, and a saving made in distance of about three-quarters of a mile; secondly, the ascent to the table lands near the village of the Picacho, where, by ascending a narrow arroyo nearer to the peak of the same name, a very steep rocky hill was avoided; thirdly, the road from the western foot of the Mimbres mountains to Ojo la Vaca, where a new location was made, leaving the old road three and a half miles west of Cook's spring, thence on an air line for Ojo la Vaca, crossing the Mimbres four miles below (south of) the old road, and saving eight miles in distance; fourthly, the straightening of several useless bends between the Ojo la Vaca and the Ojo Excavada, and between the latter point and the southern terminal spurs of the Burro mountains.

The improvement effected by these changes of location, between El Paso and the Piloncillo Pass, amount to a saving in distance of twelve miles and a half, (12.5.)

With regard to the route from the Piloncillo Pass westward, the instructions from the department were, if possible, to construct the road through Parke's Railroad Pass; thence down the Playa de los Pimos, and Arrivaypa valleys to the San Pedro, and down the latter to the Gila; this last, of course, being then followed to its junction with the Colorado—thus effecting a great saving of distance over any other possible route, and securing the greatest combination of directness, wood, water, and grass that the territory afforded. If this was not found practicable, it then devolved upon the persons in charge to select such a route as they might deem most favorable.

In pursuance of these instructions, careful and thorough explorations were made of the Arrivaypa cañon and creek; of all the available passes through the San Calisto mountains between the Playa de los Pimos and the San Pedro; of the valley of the Gila from the mouth of the San Pedro down to the Pimo villages; and of the region of country lying between the Gila and San Pedro rivers below their junction.

The Arrivaypa valley, for about twelve (12) miles of its length, was found to cañon in such a manner as to forbid the construction of a wagon road through it, though the obstacles would not be such as to prove it impracticable for a railroad.

The valley of the Gila below the mouth of the San Pedro was found to present expensive obstacles to a wagon road in the form of rocky spurs, abutting closely on the river banks, besides being a considerable increase in distance over an economically practicable and almost air line between the mouth of the Arrivaypa and a point on the Gila just below its debouchment from the last cañon of the upper Gila.

The valley of the San Pedro having been found practicable, the following location was adopted from the western end of the Piloncillo Pass:

Leaving the old road at the western foot of the mountains the line proceeds nearly west over a gradually sloping plain, with a clay and gravel surface, to the Rio San Domingo, (or Sauz,) crossing this stream about three miles below the old road, and where it has a width of about three (3) feet and an average depth of eight (8) inches; thence over a gradually ascending plain, with a firm surface, generally of reddish clay, to the Sycamore spring about three miles east of the summit of Parke's Railroad Pass, and situated near the base of the foot hills of the Chiricahui mountains; thence over a rolling surface, across the long sloping spurs of the before mentioned mountains to the wide, open divide of the Railroad Pass; through this pass, over a gently descending slope, it enters the valley of the Playa de los Pimos, and reaches the Croton springs, situated at the northern end of the main playa. Leaving these springs, the road ascends, with a light grade, a wide plain with a compact clay surface for several miles, and entering a gradually ascending smooth arroyo, it attains the low summit of Nugent's Pass. Thence descending a long, wide, gently sloping water drain, it crosses the main arroyo from Nugent's Pass, running to the San Pedro, and proceeds in a direct line from the summit to the latter stream, crossing an intervening rocky spur from the San Calisto mountains and descending to the San Pedro over a wide, uninterrupted, and sloping plain, intersects that river about thirteen (13) miles below

the old road crossing; and thence turning northward, down stream, follows along the right bank of the river to the mouth of the Arrivaypa creek.

On the first twenty miles of the route down the San Pedro river, the narrowness of the valley and the infringing spurs, rendered necessary frequent side hill locations, though no hills were encountered offering very serious obstacles to a reduction of grade. The soil was generally a loose clay and gravel, or cobble stones, easy of removal, preserving its stability with steep side slopes, and consolidating readily and firmly in embankment. Below, in the remaining thirty miles of the river valley, the principal obstacle to the opening of the road was found to be heavy mesquit timber and brush.

Opposite the mouth of the Arrivaypa creek, the road crosses the San Pedro, having a width of twelve feet and flowing in a clear stream about eight inches deep over a pebbly bottom. Leaving the San Pedro, the road ascends a large arroyo or water drain, three miles to a spring, where it turns to the right up a branch valley, having a gradually ascending slope, with a light clay and sand surface, to the divide of the Santa Catarina. between the waters of the San Pedro and those flowing into the Gila river. Passing for several miles over the gently rolling surface of this high divide, it then enters a long drain descending to the Gila; follows it with a gentle slope to within eight miles of that river to another spring, and, thence turning to the left, ascends the bounding mesa of the arroyo and proceeds toward the Gila river over a gradually descending plain, with a firm surface of red clay and fine gravel, intersecting the river fifteen and six-tenths miles above the old road from Tucson, and proceeding thence down the left bank of the stream to the Maricopa wells, over the elevated bottom lands of the river. Thence crossing the "Little Desert," the line of the old road is followed generally, the only exceptions being in the ascents to two or three of the table lands passed over, and the avoidance of one or two others, together with the straightening of several useless bends; all changes being minor in themselves, but forming a very important aggregate to the traveller over this portion of the route.

By this change of location between the Piloncillo Pass and the Pimos villages on the Gila, a saving in distance was effected of thirty-five and one-tenth (35.1) miles; an increase of over seventy (70) miles along running water made, and the second best valley of the territory opened to the inspection of the emigrant, who otherwise might have passed through the country without dreaming of its existence. The entire amount of saving effected in distance, by the new location, between El Paso and Fort Yuma, is forty-seven and sixty-four-hundredths (47.64) miles.

The improvements effected upon the line of location consist of two kinds: the improvement of surface and the reduction of grades, and the increase and improvement of watering places. I would preface my remarks upon this subject by stating that the road, in excavation and embankment, was constructed with a width of eighteen (18) feet on straight lines, and twenty-five (25) feet on curves, and in all clearings of timber, brush, and rock, was opened to a uniform width of

twenty-five (25) feet, allowing ample room for the management of ten mule teams, in common use in that country.

The improvements, both as to grade and watering facilities will be taken up as they occur upon the road from El Paso going west.

Through the gorge of the Rio Grande for about seven (7) miles the road was constructed by side hill cuttings and embankment, along and around the ends of the spurs on the left bank, requiring the excavation of 5,330 cubic yards of earth, which was deposited in embankment, forming half the width of roadway, and 3,900 cubic yards of rock, which was principally employed in forming the embankment and retaining wall on a short curve about three miles above El Paso. The earth excavated consisted of a compact clay and gravel, frequently requiring blasting for its economical removal, and the rock (which was encountered at only one point) was a hard metamorphic conglomerate. By the execution of this work all the hills of the gorge, with one exception, were avoided, and this one, having an ascending grade of about 1' in 10', and one descending of 1' in 20', was freed from all loose rock and stones, levelled up, and drained, materially reducing the labor of its transit.

Next in order is the road between Mesilla and the village of the Picacho, (the point of departure of the road from the Rio Grande valley.) The line here follows up the valley for six (6) miles through a low, rich bottom, thickly studded with cornfields and intersected by numerous ascequias or irrigating canals. To avoid the injurious effects of rain and the frequent overflowing of the ascequias on the heavy loam along this portion of the route, it was found necessary for about three (3) miles to isolate the road bed by ditches on either side, and to raise the surface by the material thus excavated; also to construct bridges over five of the ascequias, all requiring embanked approaches, from the fact that the water to be crossed is always higher than the surrounding country. These bridges were of the simplest description, having from eight to ten feet span, and consisting of cottonwood logs (obtained along the river bank) as stringers, and similar smaller ones as cross pieces, the whole being covered with a layer of earth eight inches deep. The entire amount of earth excavated on this section of the road was about ten thousand (10,000) cubic yards of a black loam and sand intermixed, quite moist, and difficult to work from its tenacity.

The arroyo, along the base of the Picacho, leading to the table lands, was the next point improved. The work consisted principally of very light side-hill cuttings and a clearance of loose rock from the road, which was not measured. The results obtained were a shorter ascent to the "mesa" and the avoidance of a very steep incline of rock on the old road. In addition to this road, by way of the Picacho, another was improved which ascended the mesa directly west of La Mesilla, and striking for the pass in the former road through the first range of hills west of the river, proceeding over a gently undulating and grass covered plain, with a loose red clay and sand soil, intersecting the first road at the above mentioned pass, twelve (12) miles from the Picacho. The work upon this route consisted of the ditching of the road bed in two low places, each about fifty yards long, and

the bridging of two large ascequias, effecting by this route a saving of three (3) miles in distance between La Mesilla and Cook's spring.

About twenty-five miles from the Picacho the road ascends to a more elevated plateau, passing up a short arroyo and ascending the side of a spur to the level above. The work at this point consisted of a side-hill cut for one hundred yards through a white clay, intermixed with fragments of quartz and basalt, rendering the ascent straight and gradual, in place of the former, which was curved and very steep, and which passed directly up and over the summit of the spur.

One mile west of this cañon was constructed a reservoir, consisting of a dam of stone and earth across an arroyo, (showing evidences of a somewhat extensive drainage.) The bed rock was exposed, and cleared off on the bottom and sides of the dam, having a top and bottom width of thirty feet and depth at sides of ten (10) feet, the slope of the arroyo being about 1' in 5'. The dam was constructed of a stone wall (dry laid) thirty (30) feet long, ten (10) feet high, and three and a half ($3\frac{1}{2}$) feet thick, backed with loose earth and stone, sloping 4' to 1', forming a pool of about forty thousand (40,000) gallons capacity.

Between this reservoir and the break of the plateau, (twelve miles east of Cook's spring,) the work consisted of the removal of a quantity of loose basaltic fragments from the roadway. At the eastern edge of the low plain, lying between this plateau and Cook's spring, a well six (6) feet in diameter and seventeen (17) feet deep was constructed; and two tanks, each seventy (70) feet long, nine (9) feet wide, and four (4) feet deep, sloping 3' to 1', having a united capacity of sixteen thousand three hundred and sixty-two (16,362) gallons. The material excavated consisted of a compact red clay; and basaltic bed-rock was encountered at the bottom of the well.

Twelve miles west, at Cook's spring, two tanks were constructed receiving the surplus drainage from the spring, each having a length of fifty (50) feet, depth of five (5) feet, and width of ten (10) feet, sloping 2' to 1', having a united capacity of twenty-six thousand eight hundred and ninety-two (26,892) gallons. The material excavated was a moist black loam and clay; sand underlying at a depth of six feet.

On the ascent to the summit of the Mimbres mountains, the work along the arroyo consisted of very light side-hill cuttings near the summit; on the descent it was principally the removal from the roadway of numerous large porphyritic fragments, which formerly rendered the descent of the hill-side both difficult and dangerous to loaded wagons. Minor improvements were also made in leading the road down the arroyo, draining toward the Mimbres river.

Along the new route to the Mimbres no work was necessary beyond driving our wagons over it to render the surface well marked and compact.

At the Ojo la Vaca (which is a collection of springs welling up from a marshy mass in the centre of a small basin situated on an elevated rolling plateau) a drainage trench was excavated, forming a water trough, surrounding the centre of the basin, from whence the waters

of the spring proceed, having a capacity of ten thousand six hundred and ninety-two (10,692) gallons; and several smaller ones, along the sides of the basin, for the purpose of obtaining drinking water, uncontaminated by stock, &c.

Between this point and Ojo Excavado the work consisted of the marking of the new road and the removal of loose stones from the road way for about three (3) miles east of the last mentioned spring.

The Ojo Excavado, situated under the western slope of Cook's mountain, is the outbreak of the water draining from this spur of the Burromountains, bounding the cañon of same name, and issues from the rents of a porphyritic upheaval. The only improvement of the watering facilities, possible at this point, was the clearance from between the bed-rock of the superincumbent clay and gravel. The work executed consisted of the excavation of a hemispherical reservoir, having a diameter of twenty (20) feet and depth of five and a half ($5\frac{1}{2}$) feet in the centre, receiving the waters of the spring in the bottom, and having a capacity of five thousand five hundred and eight (5,508) gallons.

For three miles west of this spring, the road being on a new location, required the removal from the surface of a quantity of small volcanic fragments which overlie the soil near the foot slopes of all the hills in this region of country.

The centre of the "Valley of the Playas" next claims our attention. At this point was constructed a tank one hundred (100) feet long, six (6) feet deep, and twenty (20) feet wide, sloping on the western side 3' to 1', and a slant well sixteen and a half ($16\frac{1}{2}$) feet in diameter at the top, five and a half ($5\frac{1}{2}$) feet at the bottom, having a depth of thirteen and a half ($13\frac{1}{2}$) feet, so located as to receive the surplus water from the tank draining down from the south, the two having a united capacity of one hundred and fourteen thousand five hundred and thirty-four (114,534) gallons. The soil encountered in the excavation of the tank was a compact yellow and red clay; and the same for the same depth in the well; below that thin layers of sand were found, about four inches in width and three feet apart. The soil at the bottom of the well was a very compact red clay.

The next point improved was the basin of the "Valley of the Llagunas," in the centre of which was sunk a slant well to receive the drainage from the basin, having a diameter at top of twenty (20) feet, at bottom of eight and a half ($8\frac{1}{2}$) feet, and a depth of thirteen and a half ($13\frac{1}{2}$) feet, with a capacity of fourteen thousand and ninety-four (14,094) gallons. The soil encountered for a depth of ten (10) feet, was a very compact red clay, intersected by layers of sand about four inches in thickness, and about three feet apart, thence downward the excavation was through a tenacious white clay.

Twelve miles west of this point at the descent of the pass through the Piloncillo range, a side-hill cutting was made, about one hundred (100) yards long, and all short turns were widened, requiring the excavation of one hundred and fifty (150) cubic yards of earth, and ten (10) cubic yards of rock; the roadway for fourteen (14) miles to the Rio San Domingo was cleared of brush and loose stones.

At the crossing of the latter stream a pool was formed by a trench

and dam on the lower side; the trench being perpendicular to the course of the stream, one hundred (100) feet long, four (4) feet deep, and seven (7) feet wide at bottom, sloping on the upper side 3' to 1'; the material excavated being deposited in embankment on the lower side, forming a water raise of six (6) feet, with a pool forty (40) feet long, having a capacity of about seventy thousand (70,000) gallons. The soil was a mixture of yellow clay and loam, overlying sand, which was only penetrated by a test pit.

Sycamore spring, three miles east of the summit of the Railroad Pass, was the next point where any improvement was found necessary. Here the water percolates through a stratum of sand and gravel from the Chuicahui mountains, and formerly in dry seasons, was only exposed at a break in the stratum in the shape of a round hole of water about six inches deep and three feet in diameter. Commencing above this point, a trench was sunk parallel with the direction of the water drain, forty-eight (48) feet long, twenty (20) feet wide at top, four and a half (4½) feet at bottom, and eight (8) feet deep; passing through the layer of sand, gravel, and cobble stones containing the water, to a compact red clay beneath; piercing this four (4) feet in depth, and forming a basin for the reception of the water draining down through the pervious strata above; having a capacity of thirteen thousand four hundred and forty-six (13,446) gallons, with a sufficient discharge from the spring to fill it three or four times in twenty-four hours.

The passage of the spur of the San Calisto mountains crossed in reaching the San Pedro, was the next point needing work, which consisted of the removal from the roadway of a large quantity of loose fragments of volcanic rock, which encumbered the ascent for about one half mile. Thence descending the San Pedro, the first twenty (20) miles required a considerable amount of work in the passage of the summits of low spurs, and the side locations around their points when practicable. These hills were generally composed of metamorphic sandstone, overlaid with red clay and gravel, through which latter material all the excavations were made. In the construction of the road ten thousand (10,000) cubic yards of material were removed along this section, leaving a broad, firm roadway, offering no obstructions to the passage of heavily loaded wagons.

Below this section the valley increases in size to a width between foothills of about two and a half miles, and the only work necessary upon the road was the clearing and grubbing through occasional heavy groves of mezquit timber, there being a total of five (5) miles of this clearing along the lower portion of the route, exclusive of small timber and brush, which was encountered at nearly every mile for twenty-five (25) miles in distance.

Between the crossing of the San Pedro and the intersection of the road with the Gila river the road passes over an elevated plateau, studded with isolated peaks, forming the northern terminal spurs of or the Santa Catarina range, which here breaks up and lowers its water shed, leaving a passage of about ten miles in width, rising again in rugged mountains along the banks of the Gila. The rise on both sides is gradual, and the surface compact red clay, overlaid

in places with gravel and fragments of volcanic rock. Little or no work was necessary, except the clearing away of stunted mezquit and brush in the arroyo ascending from the San Pedro, and in the one descending to the Gila, which is followed to within eight miles of its junction with that river.

Descending the Gila the first work found necessary and executed was the passage of the road through a low range of hills on the western slope of the "Little Desert," below the Maricopa wells, which consisted of light side-hill cuttings, avoiding the short curves on the rolling ground, crossed near the summit. About the middle of the plain a well was sunk thirty (30) feet deep through sand and clay, but no water was obtained. Thence down the river the old road crossed seven mesas or low table lands, which run in from the south, with an average height of about ninety feet, an abut closely on the river bank or on lagoons branching from the river. Their sides and a portion of their summits are uniformly covered to a depth of two or three feet with an agglomeration of large black basaltic blocks, rendering the passage of these table lands a matter of serious inconvenience to loaded wagons, rather from the roughness of their surfaces than the increase of grade.

The roadway over six of these (in the first place much improved by the location of new ascents,) was entirely freed from rock to a width of twenty-five (25) feet, and the material walled up on either side two or three feet high; thus preventing other obstructions from being rolled by rains, &c., into the roadway, and serving as protecting drains on the upper side. One of the mesas was entirely avoided; about ten (10) miles of new road was cleared and opened to a width of twenty-five (25) feet; the bad sand-hill near Antelope Peak, sixty (60) feet long was paved with cobble-stones, and the summit reduced by a cutting five (5) feet in depth and ten (10) feet long. The topography of the valley and the location of the old road prevented the necessity for any very heavy work on this part of the route, but from the improvement of surface consequent upon our labors (I am informed by freighters over the road,) two days' time is saved by loaded wagons between the Maricopa wells and Fort Yuma.

On reviewing the improvements effected by this line of location, and the labor performed upon it, it will be found that there is a saving of distance between El Paso and Fort Yuma of a little over forty-seven (47) miles; (two good days' travel for an emigrant,) and from the fact that the improvement of surface alone on the Gila river, by the mere diminution of friction, in passing loads over the road has has made a saving of two days' time, we may safely estimate the entire saving of time effected by our improvements at five travelling days, in addition there is an increase of over seventy (70) miles along running water; the formation of six new watering places, reducing the greatest distance between camps to twenty-seven (27) miles; a reduction of all grades to a slope, easily ascended by teams drawing maximum loads, which for six mules is 4,000 pounds, and for ten mules about 6,000 pounds; and the opening to settlers and emigrants of the rich valleys of the San Pedro and Gila rivers.

I will now proceed to such a brief description of the country as I

deem necessary to a proper appreciation of its merits and capacities; though such elaborate and able topographical descriptions of it have been written by Captain Pope and Lieutenant Parke in their railroad reports, that it will be unnecessary for me to do more than call attention to the fact of the existence of certain topographical features, favorable to settlement and cultivation, and offering corresponding advantages for the operation of either a rail or wagon road from ocean to ocean.

The districts contained in this description will embrace only such portions of the country as are along or adjacent to the line of the wagon road, and such as were examined by parties connected therewith. The arable land found throughout this country lies entirely within the valleys of streams, and is only of such width as can be irrigated from the water course, except some portions of the lower San Pedro, and portions of the Santa Cruz valley and its tributaries. The mesas or table lands are uniformly covered with an abundance of grass, and near all watering places offer advantages for stock raising. The valleys are five in number, all containing enough timber for purposes of settlement, and having an aggregate of arable land of about three hundred thousand acres, in so far as cultivated producing unusually large crops.

Proceeding from El Paso westward, the first in order is "the valley of the Rio Grande."

This valley, traversed by the road for fifty-one (51) miles, may be considered the most important in the Territory. Above the gorge of the river—that is, from Frontera to Doña Ana—the valley varies in width from five to fifteen miles, bounded on the eastern side by the long sandy slopes of the Organ mountains, and on the western side by a low mesa, extending far westward. The banks of the river are well timbered with cottonwood, and though the grass in the immediate bottom is coarse, yet the hill slopes furnish an abundance of most excellent gama. The soil is rich and productive for a width varying from three-quarters of a mile to three miles on either side of the river. It is now cultivated with great success for about twenty (20) miles in length and three (3) in width along that portion of the western bank of the river called La Mesilla valley, and also on the opposite bank, in the vicinity of Las Cruces and Doña Ana.

The principal settlements along this portion of the valley are the towns of El Paso, Mesilla, Las Cruces and suburbs, and Doña Ana. The entire population of these places is about ten thousand (10,000,) and the total amount of arable land between Frontera and Doña Ana I estimate at eighty thousand (80,000) acres.

The next valley going west is that of the Mimbres river. Between the Rio Grande and this valley (sixty miles) the country is an elevated plateau, crossed by two low ranges of volcanic hills and the Mimbres mountains, which form the eastern boundary of the valley of the same name, and terminate about twelve miles south of the road crossing. The whole region is covered with a luxuriant growth of gama, but offers no points for settlement except near Cook's spring, where the land lying near the spring and in the valley extending south from it offers advantages for establishing stock ranches.

The Mimbres, rising about the parallel of 33°, flows southwardly for seventy miles, and sinks in the sandy plain lying between the Florida and Mimbres mountains. The stream, where crossed by the road during the time our parties were in the field, had a width of about ninety (90) feet, and an average depth of one and half ($1\frac{1}{2}$) feet, and was discharging by measurement three thousand and thirty (3,030) gallons per *second*. It was also gauged at a point four miles above at the old road crossing during the month of November, 1857, and was then discharging twenty thousand four hundred and twenty (20,420) gallons per *minute*, forming a clear mountain torrent, flowing over a wide pebbly bed with low flat banks, extending back to the long gentle slopes of the Mimbres mountains on the east, and those from near Ojo la Vaca on the west. From the head of this stream to a point six or seven miles above the road crossing the valley is said to be narrow and well defined, and during its passage of the mountains has a fine bottom land and most excellent timber. The extent of arable land is estimated at twelve thousand (12,000) acres.

The "San Pedro valley" is the next in importance to the Rio Grande, and with the tributaries on its east (the Arrivaypa) offers an extensive region for cultivation. The road passes down it for a distance of fifty-one (51) miles, from the point of the Sierra Colorado to the mouth of the Arrivaypa. Along the first twenty miles, descending, the valley is not more than one-fourth of a mile in width, bounded on either side by sloping grass-covered terraces from the San Calisto and Santa Catarina mountains, its banks fringed with a growth of cottonwood and ash. Below it opens out, having a varying width between foot hills of from three-fourths of a mile to three miles, with broad rich meadows and well timbered banks, the gradually sloping hill-sides covered with a luxuriant growth of gama and other grasses, and the more elevated slopes densely timbered with mezquit. During its course it receives three tributaries from the Santa Catarina range, which were not explored, but from their well timbered appearance must be of some importance. I should estimate the amount of arable land of this lying along the wagon route at about fifteen thousand (15,000) acres. The San Pedro, at the first point reached in the present road, has a width of about twelve (12) feet, and depth of twelve (12) inches, flowing between clay banks ten or twelve feet deep, but below it widens out, and from beaver dams and other obstructions overflows a large extent of bottom land, forming marshes densely timbered with cottonwood and ash, thus forcing the road over and around the sides of the impinging spurs. This stream is not continuous all the year, but in the months of August and September disappears in several places, rising again, however, clear and limpid.

Fifteen miles above the mouth of the San Pedro, and where the road crosses it, going west, it receives the "Arrivaypa." This stream rises in the wide valley north of the Playa de los Pinos, and breaking through the San Calisto mountains, empties into the San Pedro. The valley was ascended for twenty-five miles, to the head of permanent water; for five miles from its mouth the valley was about one mile wide, and timbered along the river bank with cottonwood, sycamore, and ash; the bed of the creek was about twenty feet wide, and

dry except during the rainy season. Thence entering the foot hills of the San Calisto mountains, the valley winds its way between high, gravelly mesas, having a width of from one-fourth of a mile to one mile, and gradually narrowing, passes through a range of mountains ten miles in width, and rising from one to five hundred feet above the stream, forming, in many cases, a cañon not over thirty feet in width, with perpendicular walls of basalt. In the bends of the creek, through the cañon, however, several small patches of rich bottom land are found, which furnish a dense growth of large sized ash, sycamore, iron, and cottonwood timber. Above this cañon the valley increases in size to a general width of three-quarters of a mile, gradually merging into the wide valley leading to the Playa de los Pimos. Five miles above the gorge the source of permanent water is reached, being a large marsh, or lagoon, from which a small stream, in many thread-like branches, winds off toward the mountains, and after uniting burst through to the San Pedro, hardly ever reaching above ground nearer than five miles from the river. The valley for the last named distance, on the upper end, has been and now is cultivated by Indians, for a width of one-half or three-quarters of a mile along the stream; their ascequias and cornfields being visible at the time of exploration. Above this marsh permanent water ceases, and a valley from ten to fifteen miles in width extends southward to the Playa de los Pimos, abounding in rich grass, and containing the springs of Dove Côt, Bear, and Lucky Butte, all situated under the foot slopes of the San Calisto mountains on the west. The stream of the Arrivaypa, was found to flow over a gravelly and sometimes rocky bed, having about the volume of the San Pedro, with evidences through the cañon of its rising twenty-five or thirty feet above its level, at time of exploration. About the head of the Arrivaypa there may be about fifteen hundred (1,500) acres of arable land, and three or four thousand in the immediate vicinity of the head springs, forming desirable land for stock raising.

The Gila river between the mouth of the San Pedro and the Pimos villages.

This section of the valley is about seventy-five miles in length, and embraces within it the lowest cañon of the Upper Gila. From the mouth of the San Pedro, for eight miles down stream, and around the junction of the two rivers, the valley of the Gila is about three (3) miles wide, having a strip of low, rich, bottom land, about one mile wide, along the river bank well timbered with cottonwood and willow, and furnishing grass of an excellent quality in abundance. Below this it cañons through an elevated and rugged range of mountains, forming the topographical termination of the Santa Catarina range. Continuing through this for about thirty miles the river has a width of about two hundred (200) yards, with steep, rocky bluffs running down to the water's edge, rendering the passage impossible except by fording the river from one point, or bend, to another. Between the curves of these hills are found occasional patches of bottom land, but quite too small and isolated to be valuable. After breaking through these mountains, the valley expands to a width of two or three miles, bounded on the north by the elevated mesas, sloping down from the

ranges to the northward; and on the south by the low, gravelly slopes, running down from the Sierra Tortalita, maintaining its width to the Pimos villages. The valley is elevated and well timbered with mezquit and cottonwood, though grass becomes more scarce, and is of a species called by the Mexicans "galleta."

Between the Pimos villages and the Maricopa wells the entire distance along the left bank of the river is now under cultivation by the Pimo and Maricopa Indians; which land is about three miles in width, lying near the river, and is highly productive. The entire valley between the foot slopes of the hills, on both sides, is about twelve miles in width; the soil, except the flats, being light red clay and sand, strongly impregnated in places with alkaline matter. The slopes of the mesas are generally covered with a coarse sand and gravel, overlaid with fragments of basalt, obsidian, &c. On this section there is about thirty thousand (30,000) acres of arable land.

The Lower Gila, from the Maricopa Wells to Fort Yuma.

This section of the river is one hundred and sixty-nine miles in length, and possesses a considerable amount of land capable of being brought under cultivation. Immediately below the Maricopa wells the river makes a sudden bend to the north, passing through a gorge, an elevated range coming down from the north, and which loses its continuity on a line directly west from the wells. To avoid this detour the road crosses an elevated plateau called the "Little Desert," thirty-nine (39) miles in width, having a firm gravelly surface and being destitute of timber. Thence descending, the valley maintains a width of from five to ten miles, with occasional low table lands with an average height of about ninety (90) feet, running into the river bank, forming in many places narrow gorges, and having between them low flats well timbered along the river with cottonwood and willow, and higher up on the slopes, dense groves of mezquit and acacia. Seven of these little plateaux are crossed between the Little Desert and White's ranch, (a distance of about one hundred and forty miles,) having a width of from three-fourths of a mile to three miles. Below this ranche the river valley is lower and wider, having a large growth of cottonwood and mezquit timber, and is only interrupted in its continuous width by the point of the Big Horn mountains twenty (20) miles above the mouth, which approach closely to the river leaving ample room, however, over gently rolling spurs of gravel and clay for the roadway.

From the point of these mountains a wide plain well timbered with cottonwood, and bounded on the south by a low mesa extends to the junction of the Gila and Colorado rivers. The soil of the mesas and elevated slopes of the Gila valley is a high sandy clay, covered with volcanic fragments, and overlaying friable sandstone, principally metamorphic, producing a scanty growth of gama and galleta grass. Nearer the river and on the lower ground of the bottom the soil is a loose loam and clay, showing frequent evidence of the presence of alkaline matter.

The river along the entire distance followed by the road maintains the same general features, having a wide shallow current flowing over

a sandy bed, and between banks averaging six feet in depth. It receives no tributaries from the south, but from the north receives the San Francisco, Mineral and Salinas rivers, each reported to have extensive valleys and a considerable discharge of water. The latter stream being said to empty into the Gila a larger body of water than that river contains above their junction. The entire amount of arable land on the left bank of the Gila from the point where the road strikes it to Fort Yuma, I estimate at one hundred thousand (100,000) acres.

In addition to these well defined valleys having running streams and arable bottom lands, there are two or three large troughs or basins traversed by the road, which form immense valleys bounded by long drawn slopes, abounding in excellent grass but destitute of timber. Of these there are three well defined *basins*, and a fourth, (the valley of the Sauz,) though not a basin, presenting the same general features and only available for the same purposes, which I consider to be stock raising.

The first of these going west is the "Valley of the Playas," lying between the Burro mountains on the east, and the Pyramid range on west. This basin has a general direction of north and south, and a width between foot hills of about fifteen (15) miles, with a length as far as known of about twenty (20) miles. The soil along the side slopes is a red clay and gravel intimately intermixed, and is covered with an abundant growth of gama grass. Along the centre of the trough, running north and south, are a series of bare clay surfaces forming what are called "*playas*," a Spanish term signifying the beaches, but used by them to describe a smooth surface showing evidences of having been covered with water.

Along the surface of these playas, during the rainy season, the water accumulates in wide, shallow lagoons, from two to six inches deep; and it was for the retention and preservation of this water that the well and tank before mentioned were constructed. The fall of rain in this interior district has, I think, been much underrated. I am not sufficiently acquainted with the science of meteorology to determine *why* more rain should fall in these plateaux than would be indicated by a regularly decreasing proportion between the Rio Grande and Fort Yuma; but that such is the case I am convinced. During a period of four months, from December, 1857, to March, 1858, a rain-gauge was placed in the centre of this playa, and during this, the dry season, indicated, when removed, an amount of rain equal to a level fall of three (3) inches, besides showing conclusive evidence of a greater fall, which the receiving vessel of gauge would not contain.

"The valley of the Lagunas" is joined at the northern end of the Pyramid range with the former valley, and lies between the Pyramid and Piloncillo ranges. It possesses the same general characteristics, and a parallel direction with the valley of the playas. The drainage, however, is not so uninterrupted, and each small playa appears to drain a distinct section of the valley. A well was sunk in the centre of this valley, where crossed by the road, which received a sufficient quantity of water to fill it, containing over fourteen thousand (14,000) gallons.

The "valley of the Sauz or San Domingo" has a small stream flowing through it, taking its rise in a large cienega or marsh about

fifteen miles above the point where crossed by the present road, and at high water, or for about six months in the year, flows towards the Gila, distant about forty (40) miles northwesterly from the road crossing. It has an average width of about three (3) feet, and depth of eight (8) inches when full within its banks, and winds around in a narrow, tortuous, and, at times, imperceptible bed in the centre of a broad, sloping valley, between the Piloncillo mountains on the east, and the Chiricahui mountains on the west, and gradually expanding, from a width of five miles near the cienega of the same name, attains a width of about eighteen miles where crossed by the road. There is little or no bottom land; the long gravelly slopes from the mountains running in almost unbroken plains to the water's edge, and are destitute of other timber than greasewood and a scattered growth of stunted mezquit. A tank was formed across this stream for the retention of water during the dry season, and I think that water for stock may be obtained by wells of no very great depth. In fact, it is reported that this valley once sustained a numerous population; but I saw no evidences of it, and cannot believe it possible that it ever did or ever will sustain a larger population than the few necessary to guard the stock which could be grazed on the plain.

The "valley of the Playa de los Pimos," lying between the Chiricahui and Pinaleno mountains on the east, and the San Calisto mountains on the west, is another wide valley having no distinct water drain, and so gradually merging into the valley of the Arriwaypa that I consider the whole tract between the crossing of the playa by the present road and the source of the Arriwaypa as one and the same valley. This valley is about fifteen miles in width, bounded by mountains whose slopes are well timbered with cedar, oak, and pine. Several springs are found on either side, offering great inducements for the establishment of stock ranches, the entire valley and the foot hills of the mountains being covered with a luxuriant growth of gama and other grasses. Water could be obtained at no great depth anywhere along the centre line of the valley. Above or south of the present road extends a playa having an exposed clay surface twelve miles long, and about seven wide in the centre, the whole plain being barren and destitute of everything.

The principal points from which timber for building and other purposes can be obtained along the line of road are as follows:

The "Organ mountains," twenty miles from the road, along the Rio Grande.

The "Santa Rita mountains," thirty miles from the crossing of the Mimbres river.

The "Burro mountains," twenty miles from Ojo la Vaca.

The "Santa Catarina mountains," along the San Pedro.

And along the elevated slopes of the Gila valley.

In addition to these sources of supply *near the road*, there is the "Santa Cruz valley" and Santa Rita mountains along its head, both valley and mountains possessing a large quantity of pine and mezquit timber.

According to a communication recently received from Sylvester Mowry, esq., (delegate elect from Arizona,) the arable land of the

Santa Cruz and Sonvita valleys is about one hundred miles in length, and two miles in width ; wherever cultivated producing *two* abundant crops of grain *annually*, and now having a population, including the miners near Tubac, of about three thousand souls, exclusive of Indians, (many of whom are semi-civilized and cultivate largely,) raising about twenty-five thousand (25,000) bushels of grain annually. From the same gentleman I learn that the last year's crop on the Rio Grande, between El Paso and Doña Ana, was about one hundred thousand (100,000) bushels of grain, besides a large crop of grapes ; also, that on the Gila there is raised by the Pimo and Maricopa Indians a sufficient amount of corn and wheat to maintain six thousand souls, besides furnishing large amounts to the mail company and travellers ; and that below their villages settlers are rapidly coming in.

Thus it will be seen that this country is not entirely a desert ; that besides being a transit for emigrants, it has within itself resources and capacities for settlement worthy of attention. With its mild, healthful climate, and immense mineral resources, this country must greatly improve, even without the impetus of a Pacific railroad. As the shortest route across the desert belt of country separating the Atlantic and Pacific coasts, and as the favored route for speed and safety of a large majority of our emigrating population, this road should possess every improvement possible to render it worthy of the interests connected with it and the government from whence the improvements emanate.

In view of these facts, I would respectfully suggest the following further improvements upon the road : Consisting of a bridge across the Rio Grande, near Frontera ; the increase in size, of the tanks now constructed, and their protection and permanency secured by lining them with stone ; and the sinking of experimental wells to a depth of from one to two hundred feet, in the basins and valleys passed over.

The bridge would be about six hundred (600) feet span, with rock foundations, and good building stone convenient ; costing about \$50,000.

The improvement of the tanks, and lining them with stone, will require about \$25,000, and the experimental wells about \$25,000 more. The two latter items, and particularly the lining of the tanks, I consider of vital importance to the road and Territory. In fact, it is absolutely necessary to the preservation of the work already executed that this should be done ; without lining or a constant supervision the tanks will fill up, and the wells cave in ; it was not within the means of the former appropriation to perfect them, and should now be done.

The sinking of wells along the valley and basin formations will solve a problem of great importance to this whole region of country, as to whether there is a sufficient amount of rain fall to form subterranean reservoirs.

Also, since it was not possible during the time our parties were in the field, to construct any works for the retention of water on the Mimbres, some provision should be made for the immediate execution of that work.

I append hereto a "table of amount of work executed," showing the kind and quantity, and the increase in water provided for by the

tanks, &c.; also an incomplete "table of temperatures," taken during the hurry of exploration, but which may serve to show the extreme mildness of the winter along the route; a "meteorological record at Fort Fillmore, on the Rio Grande," kindly furnished me by Dr. G. E. Cooper, United States army, and a "table of distances," accompanied by "a few practical hints to emigrants."

I have to express my obligations to G. C. Wharton, civil engineer, and Messrs. Hume and Cress, assistants, for their valuable services during the prosecution of the work.

Accompanying this report you will find the maps, drawn on a scale of one six-hundred-thousandth, ($\frac{1}{600,000}$) representing in two divisions the line of road from El Paso to Fort Yuma. The notes upon the maps will sufficiently explain them. Hoping that, if possible, more time may be allowed me for a revision of this report,

I remain, very respectfully, your obedient servant,

N. H. HUTTON,
Engineer of Road.

JAMES B. LEACH, Esq., *Superintendent.*

Construction. Amount of work executed.

No. of miles of grading.	Earth excavation. No. of cubic yards.	Rock excavation. No. of cubic yards.	Clearing.		Increased capacity for water, in gallons.	Locality.
			Heavy mez-quit.	Willow and brush.		
7.....	5,330	3,900	-----	-----	-----	Between El Paso and Frontera.
3.....	10,000	-----	-----	-----	-----	Bet. La Mesilla and El Picacho.
100 yds.	200	-----	-----	-----	-----	Brunch road, near La Mesilla.
3½m.	100	-----	-----	-----	-----	Arroyo, around base of Picacho.
100 yds.	100	-----	-----	-----	-----	Cañon through <i>Half-way</i> hills.
0.....	222	39	-----	-----	40,000	Dam, for reservoir, 26m. west of Picacho.
13.....	-----	500	-----	-----	-----	Bet. dam and Cook's spring.
0.....	101	30	-----	-----	16,362	Well and tanks, 12m. east of Cook's spring.
0.....	166	-----	-----	-----	26,892	Tanks at Cook's spring.
2½.....	-----	168	-----	-----	-----	Pass through Mimbres mountains.
0.....	66	-----	-----	-----	10,692	Trench at Ojo la Vaca.
3.....	-----	120	-----	-----	-----	Bet. Ojo la Vaca and Ojo Excavado.
0.....	34	-----	-----	-----	5,508	Basin at Ojo Excavado.
5.....	-----	120	-----	-----	-----	Bet. Ojo Excavado and valley of Playas.
0.....	707	-----	-----	-----	114,534	Tank and well in valley of Playas.
0.....	87	-----	-----	-----	14,094	Well in valley of the Lagunas.
1.....	150	10	-----	-----	-----	Pass through Piloncillo range.
0.....	-----	-----	-----	14m	-----	Bet. Piloncillo Pass and Rio San Domingo.
0.....	192	-----	-----	-----	70,000	Tank on Rio San Domingo.
9.....	83	-----	-----	-----	13,446	Tank at Sycamore spring.
1½.....	-----	100	-----	5m., (stms.)	-----	Crossing of spur of San Calisto mountains.
15.....	10,000	-----	7	10	-----	Along the San Pedro river.
18.....	9,000	6,000	10	25	-----	Along the Gila river.

Total excavation = 57,525 yards: Earth, 46,538 yards; rock, 10,987 yards. Increase in watering facilities, in gallons, = 311,528, which is less than true amount, as a cubic foot is considered as containing 6 gallons when it really contains nearly 6½.

Much clearing of loose stone from roadway was done, which was not measured, and is not presented in the table.

Record of thermometer.

NOVEMBER, 1857.

Date.	6 a. m.	12 m.	6 p. m.	Remarks.
	○	○	○	
19th	30	71	55	Warm and clear.
20th	55	61	46	Bright and clear.
21st	31	74	55	Do.
22d	26	53		Warm and clear; wind south.
23d	29	57		Do.
24th	31	35		Do.
26th	37			Do.
27th	36			West wind, and rain.
28th	35			Do.
29th	24		54	Bright and clear; west wind.
30th				Cold breeze from east.

DECEMBER, 1857.

1st	16	64	53	Clear and warm.
2d	25	75		Do.
3d	37		53	Do.
4th	27			Do.
7th		67	42	Cold wind, and cloudy.
9th	10		41	Very cold.
10th	35			Clear and bright; east wind.
11th	25		57	Clear and bright; southeast wind.
12th	24	75	57	Do. do.
13th	25	50	57	Cloudy; no wind.
14th	57			Do.
17th	37	57		Clear and warm.
18th	37		50	Do.
21st	29		55	Do.
22d	35		45	Cold and windy.
23d	30		40	Clear and warm.
24th	29			Do.

MARCH, 1858.

27th			75	Clear and warm.
28th	48	73	42	Do.
29th	39	77	56	Do.
30th	37	83	72	Do.
31st	46	91	73	Do.

APRIL, 1858.

1st	56	90	80	Strong west wind.
2d	60	32		Do.
3d	65		80	Do.
4th	55	80	74	Do.
5th	56	90	72	Do.

Record of thermometer—Continued.

APRIL, 1858—Continued.

Date.	6 a. m.	12 m.	6 p. m.	Remarks.
	o	o	o	
6th	60	83	72	Strong west wind.
7th	43	-----	62	Do.
8th	45	73	66	Rain at dark.
9th	47	83	60	Do.
10th	45	60	55	Cool and cloudy.
11th	37	75	60	
12th	45	83	65	
13th	-----	88	66	Clear and warm.
14th	51	86	78	Do.
15th	57	-----	65	Cloudy.
16th	55	85	67	Cloudy.
17th	50	-----	45	Rain.
18th	34	55	35	Cloudy.
19th	45	65	53	Clear; wind from north.
20th	48	73	57	Do.
21st	50	85	67	Do.
22d	48	-----	66	Do.
23d	45	90	-----	Do.
24th	45	92	-----	Do.
25th	48	92	76	Do.
26th	58	87	75	Do.
27th	50	87	-----	Do.
28th	50	77	-----	Rain and cloudy.
29th	-----	64	48	Cloudy.
30th	36	57	-----	Cloudy.

MAY, 1858.

1st	34	63	54	Wind north.
2d	38	65	58	Clear; southeast wind.
3d	42	76	59	South wind.
4th	50	79	45	Clear; wind southwest.
5th	38	-----	68½	Do.
6th	50	77	-----	Do.

SEPTEMBER, 1858.

13th	-----	107	80	All in Gila river.
14th	70	110	-----	
17th	-----	110½	95	Very warm.

Meteorological register for Fort Fillmore, New Mexico.

Thermometer.					Rain.
Months.	9 a. m.	2 p. m.	9 p. m.	Daily mean.	Amount in inches.
1857.	°	°	°	°	
July	80. 22	93. 58	80. 48	84. 76	. 43
August	77. 41	88. 48	79. 58	81. 84	3. 68
September	68. 63	79. 10	71. 60	73. 01	2. 24
October	57. 70	71. 71	63. 22	64. 37	2. 41
November	47. 16	64. 16	53. 36	54. 89	. 00
December	31. 83	52. 35	39. 96	41. 35	. 15
1858.					
January	29. 58	53. 19	37. 32	40. 04	. 40
February	43. 85	60. 28	35. 07	46. 51	. 00
March	42. 83	66. 35	50. 90	53. 37	. 22
April	59. 30	80. 08	60. 90	66. 79	. 00
May	61. 29	87. 77	63. 06	70. 70	. 00
June	74. 73	93. 63	73. 96	80. 80	1. 59
July	78. 25	92. 61	77. 38	80. 16	2. 59

HYGROMETER.

1857.					
July	69. 13	79. 54	70. 12	72. 80	-----
August	68. 32	72. 35	69. 80	70. 15	-----
September	62. 33	68. 70	62. 40	64. 44	-----
October	52. 83	62. 06	55. 38	56. 81	-----
November	42. 33	53. 16	46. 66	47. 49	-----
December	27. 45	43. 93	34. 22	35. 19	-----
1858.					
January	26. 83	43. 77	31. 74	34. 00	-----
February	31. 03	49. 35	37. 17	39. 08	-----
March	37. 22	55. 90	43. 73	45. 55	-----
April	49. 30	60. 86	51. 06	53. 76	-----
May	51. 74	62. 80	53. 45	55. 99	-----
June	62. 56	71. 30	62. 66	65. 50	-----
July	68. 51	75. 16	68. 03	70. 58	-----

Memoranda for Emigrants.

The best season for emigrants, or persons driving stock over this route, to leave the neighborhood of Fort Belknap, Texas, is about the latter part of July, or the first of August; for the reason that along the eastern line of travel through Texas, connecting with this road at El Paso, the rainy season is just ending, and water is abundant in all "jornadas," and the grass is in its most favorable condition. West of the Rio Grande, moreover, the same advantages are obtained, besides having the cool months to pass down the Gila, and from Fort Yuma to San Diego, or other parts of California over the Colorado desert.

Should it be desirable to recruit stock about the vicinity of the Mimbres river, a camp should be formed about six (6) miles above the road crossing, where wood, water and grass abound.

During the summer months, and when the Gila is low, large droves of cattle would pass more easily down the San Pedro to its mouth, and thence down the Gila, fording that river several times; wagons could not be carried over this route.

All recruiting of stock should be done along the San Pedro, and the Gila end of the route passed over rapidly; particularly with large bands of stock, as they run great risk of being scattered and lost in the wide, brushy, bottom lands.

Corn and wheat can be obtained at all points on the Rio Grande, varying in price from \$1 50 to \$2 50 per fanega (of 2½ bushels.) It can also be obtained at Tucson, fifty miles from the crossing of the San Pedro, and at the Maricopa villages on the Gila.

Persons passing along during the dry season between Ojo la Vaca and Ojo Excavado, with a large amount of stock, should divide their herd at the crossing of Burr's cañon, nine miles from Ojo la Vaca, sending a portion up the cañon five miles to a tank in the rocks, by an old road, joining the present one, one mile beyond Ojo Excavado.

The places where most particular caution in regard to Indians must be exercised are at the crossing of the Mimbres, the Piloncillo pass, and along the San Pedro river; though they are not at all troublesome if any guard whatever is maintained.

Persons going to the vicinity of Fort Buchanan take *all left hand roads*, beyond Croton springs; going to Tucson, from crossing of San Pedro, take left hand road, three miles from river, near spring.

N. H. HUTTON.



Table of distances and camping places on the line of El Paso and Fort Yuma wagon road.

Name of station.	Distance from pre- ceding station.	Distance from El Paso.	Remarks.
	Miles.	Miles.	
El Paso.....	0	0	
Cottonwood. (ranche)	22.0	22.0	Wood, water, and grass abundant.
Crossing of Rio Grande.....	20.0	42.0	Do. do.
La Mesilla.....	3.0	45.0	Do. do.
El Picacho.....	6.2	51.2	Wood at short distance; good water and grass.
Tank.....	25.0	76.2	Wood at short distance; rain water, good grass.
Cook's spring.....	25.2	101.4	Wood, water, and grass abundant and convenient.
Rio Mimbres.....	16.8	118.2	Grass and water convenient, wood scarce.
Ojo la Vaca.....	13.4	131.6	Wood and grass at short distance; good spring water.
Ojo Excavado.....	13.1	144.7	Wood, water, and grass convenient.
Tank.....	17.1	161.8	No wood; grass and water convenient.
Well.....	11.1	172.9	Do. do.
Cottonwood spring.....	11.9	184.8	Wood, water, and grass convenient; water <i>not permanent</i> .
Rio San Domingo.....	14.0	198.8	Wood and water convenient, grass poor.
Sycamore spring.....	23.4	222.2	Wood, water, and grass convenient and abundant.
Croton spring.....	23.6	245.8	Spring water abundant; wood and grass distant.
Rio San Pedro.....	22.8	268.6	Wood, water, and grass abundant, and at convenient points.
Mouth of Arrivaypa.....	52.1	320.7	Wood, water, and grass abundant, and at convenient points.
Spring, (cottonwood).....	15.6	336.3	Wood, water, and grass convenient, not abundant or permanent.
Spring.....	0.8	337.1	Wood, water, and grass convenient; spring uncertain.
Spring $3\frac{1}{2}$ miles from road..	11.5	348.6	Wood, water, and grass convenient; spring uncertain.
Rio Gila.....	19.2	367.8	Wood, water, and grass abundant and convenient.
Zaceleno camp.....	15.6	383.4	Wood, water, and grass abundant and convenient.
Maricopa wells.....	21.0	404.4	Spring water; grass and wood at short distance.
Foot of Little Desert.....	38.9	443.3	Wood and grass convenient, water little distant, grass scanty.
2d watering place.....	7.6	450.9	Wood and water convenient, grass scattering and poor.
Oatman's flat.....	20.3	471.2	Wood, water, and grass convenient and abundant.
Wellsville camp.....	15.5	486.7	Wood, water, and grass convenient.
Good camping ground.....	14.0	500.7	Do. do.
White's ranche.....	17.0	517.7	Do. do.
Antelope peak.....	12.5	530.2	Wood, water, and grass convenient; very little grass.
Fillibuster's camp.....	5.7	535.9	Wood, water, and grass convenient; very little grass.
Old Salt Grass camp.....	18.0	553.9	Wood, water, and grass at short distance in arroyo.
Fort Yuma.....	19.2	573.1	Wood and water, no grass convenient.

NOTE.—Along the Gila grass is scarce and scattering, and should be looked for in patches off the road, from a half to one mile.

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Reports of Superintendent George L. Sites upon the Platte river, Dacota, and l'Eau qui Court wagon road, constructed under the direction of the Department of the Interior. 1857, 1858.

DACOTA CITY, NEBRASKA TERRITORY,
July 10, 1857.

DEAR SIR: Enclosed herewith please find my report of a reconnaissance from the Platte river to Dacota City, for the wagon road from the Platte *via* Omaha Reserve and Dacota City to Running Water river, accompanied by a map of the survey.

The report has been hastily prepared, entering only into such details as immediately appertain to the road, so as to enable the department to give me definite instructions for my future government.

Upon the completion of the location of the road a full and complete report will be submitted.

With the permission of the department I shall bend every energy towards a completion of the construction of the bridges by the time cold weather sets in.

When the construction of the bridges shall have commenced it would add much to the convenience of the disbursing officer to have a place of deposit established at Omaha City. This would enable the employés to obtain the constitutional currency for the checks of the superintendent. At present these checks can be disposed of to local banks, for which they can obtain only a paper currency, most of which is foreign to the territory and of very doubtful value. I would suggest that the receiver of the land office at Omaha City would be a proper person with whom to deposit the funds. I had the honor of addressing a letter to the department under date of 26th ultimo, asking for a modification of my instructions, to which I would ask, respectfully, the attention of the department.

I have the honor to be, very respectfully, your obedient servant,
GEO. L. SITES,

Superintendent wagon road from Platte to Running Water.
Hon. JACOB THOMPSON,
Secretary of the Interior.

DACOTA CITY, NEBRASKA TERRITORY,
July 10, 1857.

SIR: In obedience to a clause in my instructions of the 15th of May, 1857, requiring the superintendent to "report to the department from Dacota City, upon the portion examined that far" of the route for the wagon road from the Platte river *via* Omaha Reserve and Dacota City to the Running Water river, I have the honor to submit the following report:

My instructions ordered me to "proceed at once to the Platte river, and with your (my) engineer make preparation for a rapid reconnaissance and survey of the proposed road, with a view to ascertain the

proper location, and to determine the amount of earth work to be done, the number and character of the bridges which will be required, and the facilities for the construction of the bridges, and such other information as will advise the department of the approximate cost of the road, and enable it to furnish you (me) with definite instructions for your (my) future government."

In reference to the character of this road my instructions say: "It is presumed that Congress did not contemplate the construction of a road designed to be thoroughly graded and bridged, to be commenced with a view to future appropriations, but that a road to meet the *immediate wants of the settlers* in that region should at once be made from point to point; such a road as can be made throughout the entire distance for the sum appropriated for that purpose."

Under the clause last referred to I was induced to make an examination of that part of the Territory lying north of the Platte in which the settlers had located, and for whose "immediate wants" I was ordered to construct the road.

I found that the settlements in that portion of the Territory were confined, with but few exceptions, to the Missouri bottom and bench lands, the Platte valley, and upon the various streams whose waters flow into the Missouri or Platte. Upon the Missouri or Platte, they run back from the rivers respectively to a distance of about ten miles, meandering in most instances with the rivers until you approach the mouth of the Platte, when they extend to the valley of the Elkhorn, a distance of about twenty-five miles from the Missouri and about fifteen miles north of the north bend of the Platte. Upon the tributaries they are confined to the immediate valleys of the streams, running back from one to twenty miles, where they debouch from the bluffs or divides.

The timber is scarce and only found within the valleys of the Missouri and Platte, in close proximity with the water and upon the side of the bluffs next the river, and the ravines bordering upon the small streams, with here and there a few scattering groves of timber of from ten to two hundred acres. The timber in the bottoms consists of cottonwood, with some cedar, and upon the bluffs and in the ravines oak, walnut, elm, and hickory are found. The counties of Sarpy, Douglas, Washington, and Dakota, have the great body of the timber and at present contain about seven-eighths of the entire population north of the Platte. The country upon the divides between the Elkhorn and the Missouri is perfectly destitute of timber, so also is the Elkhorn valley north of Fontenelle, the county town of Dodge county.

I am also informed, by a gentleman of undoubted veracity, that there is no timber upon the small streams putting into the Elkhorn. If my information is correct, a road along this route would be impracticable, on account of the great expense that would attend the bridging of the several streams to be crossed; the timber for the construction of the bridges would have to be obtained from the Missouri.

There is another divide and which is one of the routes I have hereinafter proposed to examine on my return along which a trail is found, known as the "Poncas trail," which winds with the ridges, very meandering, and along which wagons pass in time of a flood,

from Omaha City to Iowa creek, passing about fifteen miles from this place; its general direction being west of north. I am informed that, from its serpentine character, it increases the distance between thirty-five and forty miles, and that no water is to be found upon or very near the route. No stream is upon this route for a distance of some eighty miles. The construction of a road upon this route would cost nothing, as there is already as good a road as could be made, without involving a heavy expenditure in grading. Of its character, however, I can speak definitely after reconnaissance.

These considerations led me to make a reconnaissance first of a route for the road through the counties of Sarpy, Douglas, Washington, and Burt, *via* Omaha Reserve, which is eighteen miles from south to north, to Dacota City, in the county of Dacota, through and over what is called the bench-lands, or second bottom of the Missouri, and the ridges or divides through tracts of Sarpy and Douglas counties, and the entire width of the Omaha Reserve, at an average distance from the Missouri river of about five miles, with numerous streams, affording water at all seasons. Over this route a good road can be obtained, almost direct, with an easy grade; the only objection being the expenditure involved in the bridging of the numerous streams, the character and expense of which will be found in the Appendix marked A.

We procured the field notes of a survey of a territorial road from Cedar island, upon the Platte, about seven miles from its mouth, to Omaha City, and we made a survey with compass and chain, from a point on the Platte river, about three miles from its mouth, *via* Bellevue, to a point where it intersected a survey of a territorial road from Bellevue to Omaha City, notes of which we also procured.

By the kindness of one of the commissioners we were permitted to copy the bearings and distances of a territorial road surveyed from Omaha City to Dacota City.

We measured the distance upon the present travelled route from Omaha to Dacota with the odometer; and we noted the crossing of streams and the topography of the country over which we passed; the routes, whether run by the compass or measured by the odometer, will be found upon a map which has been hastily but very accurately prepared, under the direction and supervision of my engineer, Mr. Smyth, by Mr. Snyder, a young gentleman who has proved himself very useful to our party, especially in assisting Mr. Smyth. The river was drawn from the United States surveys, so far as they have been made, and from the best authorities at our command. I believe you will find the Missouri river more accurately laid down in this than in any map extant.

We propose, unless otherwise directed by you, to so divide our party, upon our return from the l'Eau qui Court, that we may be enabled to take a rapid view of at least two additional routes between this place and Omaha City.

As at present advised, I cannot suggest the most proper route for the location of the road from the Platte to Omaha City; the Platte river was in a very high stage of water, and our examinations, which occupied two days, did not satisfy us of the point where a safe and reliable ferry could be obtained.

The current is very swift, and at the point where we took its measurement we found it to be about 1,900 feet wide, varying in depth from one to ten feet—banks low, but not subject to overflow, and a quicksand bottom. I am informed its greatest rise does not exceed thirty inches, and from Fort Laramie to its mouth, a distance of about 850 miles, it maintains about the same width, with an average fall of six feet to the mile. We can somewhat imagine the velocity of its waters when we come to recollect that the Missouri river, the current of which is proverbial for swiftness, has, from Council Bluffs to St. Louis, but an average fall of six inches to the mile. Unless a more feasible route can be obtained upon the "Poncas trail," I am of the opinion that the proper route for the road from Omaha City to this place would be upon or near the route laid down on the map accompanying this report, as the survey of the territorial road.

Much improvement could be made upon that route when we come to locate; and some of the streams, I am satisfied, can be avoided, or crossings can be obtained by cutting down the banks; this would materially lessen the expenditure. We can avoid grading upon the whole route from the Platte to this city, with the exception of crossing the bluffs about seven miles above Omaha City, and in the Omaha Reserve; and I am led to believe that but little grading will be found necessary, when a careful examination shall be made at the time of the location of the road.

By both the travelled and surveyed routes, the streams and the character of the bridges do not materially differ. We find that there will be twenty-four bridges to be constructed, varying from ten to seventy-five feet in length, at an estimate of \$75 to \$1,000; the estimate for the cost of construction being graduated according to the length of the bridges. The total estimate for the construction of the twenty-four bridges is \$11,725. The grading is estimated in gross at \$3,275—making a total of \$15,000—for bridging and grading from the Platte to Dakota City, a distance of 104 miles. For the detail, in reference to the bridges, I beg to refer to the data furnished by my engineer, in Appendix A.

By winding with the ravines an easy grade can be found over the greater part of the route; the estimate therefore of the engineer for grading is only in a gross sum, without being able, from the rapidity of our reconnaissance, to obtain the proper data upon which to found even an approximate estimate. You will therefore exercise a great degree of allowance for any discrepancy that may occur between the present estimate and the actual cost of grading. The estimate for bridges, with the facilities for obtaining lumber, will more nearly approximate the actual cost.

By this route from the Platte to Omaha City it is about thirteen and one half miles, eight of which is upon the Platte river, Papillion creek, and Mud creek valleys, nearly level, and the remainder lies upon a high, rolling prairie.

From Omaha to Florence, a distance of five miles, it lies upon the level bench lands of the Missouri.

From Florence to Fort Calhoun, a distance of about nine miles, there is about four and one half miles over the bluffs somewhat rough, and the remainder upon high prairie, nearly level.

Fort Calhoun to De Soto, a distance of five miles, it is level, passing through about three miles of timber directly at the foot of the bluff, and two miles of prairie.

De Soto to Cumming City, seven miles, one of which is upon high, rolling prairie, and six upon bench land. Cumming City, *via* Tehamah, to Decatur, about thirty-two miles, the route is level, upon bench lands. We here pass into the Reserve, eighteen miles in width, the entire distance of which is high, rolling prairie, known as the Blackbird hills, skirting upon the timber in the gorges putting into the Missouri. By winding with the ravines and ridges a very fair road can be obtained.

This brings us to the foot of the bluffs, where we have the bench lands of the Missouri to Dakota City, a distance of nine miles.

We start immediately upon the reconnaissance from this place to the Running Water, and, owing to the mail facilities, will not be able to forward a report of this portion of the route until after our return to Dakota City.

All of which is most respectfully submitted.

I have the honor to be, very respectfully, your obedient servant,

GEORGE L. SITES,

Superintendent Wagon Road from Platte to Running Water.

APPENDIX A.

Statement of the number and character of the bridges which will be required, and the facilities for the construction of the same, between the Platte river and Dakota City.

	bridge 60 ft., timber within 1 mile, steam saw-mill	1½ mile, cost.	\$900
Papillion creek,			
Creek S. of Omaha,	30	1	400
Ravine N. of Omaha,	15	2	100
Spring creek,	50	3	800
Ponca,	30	1	400
— creek S. of Calhoun,	15	1½	100
— creek S. of Calhoun,	15	2½	100
Moore's creek,	70	6	950
Mill creek,	25	2	250
Glover's creek,	12	1½	75
South creek,	12	6	75
North creek,	20	7	150
New York,	60	12	900
Pike creek,	30	14	400
— creek,	20	9	150
— creek,	20	8	150
— creek,	10	7	75
Tekamah creek,	50	½	800
Silver creek,	50	4	800
Elm creek,	40	1	600
Wood creek,	40	1	600
South Blackbird,	75	8	1,000
North Blackbird,	75	—	1,000
Omaha creek,	70	2½	950

Grading..... 11,725

3,275

15,000

Bridges are not absolutely necessary across Moore's creek and the two Blackbird creeks, as fords can be obtained by cutting down the banks, which, however, are very high and steep; but these streams will often be impassable on account of high water, and, if possible, bridges should be built across them for the convenience of the traveling public.

The cheapest and simplest plan for all the bridges on this road, I think, is as follows:

The abutments to be formed by driving piles to a solid foundation, in a row, and sawing them off to a proper level, and connecting them at the top by a cap-sill; and they may be further secured by diagonal braces halved to the uprights or pinned to them. For the longer bridges there should be several bents placed parallel to each other, and firmly connected together by cross pieces. Where piles cannot be driven, a grillage may be formed by laying square timbers horizontally across each other and securing the uprights to them, and the grillage retained by an enrockment; or the abutments may be made of cribs composed of large square timbers, halved into each other and otherwise firmly connected with iron bolts or wooden braces, the enclosed area being filled with stone or earth.

THE FRAMES.

For a bridge not exceeding 12 feet sleepers are to be laid parallel to the direction of the road-way, resting on the supports, to which they are notched or pinned with iron bolts, and the flooring nailed down on them.

If the bridge is from 12 to 20 feet long short pieces, termed *corbels*, will be placed on the caps of the piers or abutments, which will serve the purpose of lessening the bearings. When the bridge is over 20 feet long the corbels will be supported by struts. When the bridge exceeds 30 feet and is less than 40 feet in length, it will be best to displace the corbels and put a straining beam in the middle of the sleepers, and sustain it by two struts. For bridges above 40 feet in length it will be necessary to use both the corbels and straining beam.

In the above cases the floor rests on the frame. In some of the bridges to be constructed it will be better for the flooring to be suspended from the framing. For this purpose the simplest arrangement will be to have a tie-beam resting on two supports, with two inclined pieces mortised near the ends of the tie-beam, and abutting against an upright or king post placed in the middle of the tie-beam. The cross joists are laid on the tie-beam, and with it are suspended from the inclined pieces by means of the king post.

For bridges between 40 and 100 feet long a straining beam should be placed between the upper ends of the inclined pieces, and suspending the road-way and tie-beam from these points by two stirrup pieces termed queen posts; and diagonal braces should be placed in the space between the queen posts and tie-beams.

The points where joists may occur in the sleepers or chords should be supported by iron castings, and the stirrup pieces or uprights

should be well strengthened with large iron rods. In locating the road it may and probably will be necessary to make some change in the plan of a few of the bridges.

HENRY B. SMYTH,
Engineer.

BELLEVUE, NEBRASKA TERRITORY,
August 10, 1857.

SIR: I have the honor to herewith enclose my report for that portion of the route for a wagon road between Dakota City and the Running Water.

I would also acknowledge the receipt of a letter dated the 9th of July, 1857, from Albert H. Campbell, general superintendent Pacific wagon roads, advising me that \$3,000 of the appropriation would be reserved to meet unforeseen contingencies, &c.; also a communication from the department, modifying my instructions, dated the 11th of July.

The latter part of the 4th clause of my instructions of the 15th of May indicates that "further instructions for my future government" will be given upon receipt of my reports. I have not as yet received any further instructions subsequent to the receipt of my report of the 10th ultimo.

I have the honor to be, very respectfully, your obedient servant,
GEORGE L. SITES,
Superintendent Nebraska Wagon Road.

Hon. JACOB THOMPSON,
Secretary of the Interior.

BELLEVUE, NEBRASKA TERRITORY,
August 10, 1857.

DEAR SIR: In obedience to my instructions of the 15th May last, ordering me to make a rapid reconnaissance and survey of a route for a wagon road from the Platte river, via Omaha Reserve and Dakota City to the Running Water river, under date of the 10th of July I submitted a report of the route from the Platte river to Dakota City. I now have the honor of reporting upon that part of the route between Dakota City and the Running Water river.

Dakota city is situated upon the Missouri bottom, on the west bank of the river, several feet above high-water mark, at a distance of about 8 miles from the bluffs on the southwest, and about 5½ miles south of Sioux City. It is 96 miles north and 27 miles west from the mouth of the Platte river, which would be, in a direct line, N. 16° W., 100 miles. Just above this city the Missouri takes its great bend, known as the "Serpentine Bend," and near where the river changes its course from a direction south of east to that of east of south. From a point upon the west bank of the river, and upon the eastern boundary

of Dakota City, it is $3\frac{1}{2}$ miles, in a due west course, through the bottom to the south bank of the river as it comes from the west, and just before the river has taken its great bend ; whilst the distance between these points by the river is estimated at 20 miles.

We left Dakota City on the 11th of July and travelled over the bottom N. 75° W., S. $1\frac{7}{10}$ miles, where we struck the bluffs, which are low and regular, and of easy ascent ; in nearly the same direction we passed over the divide about one mile, when we came into the Elk creek valley ; passing up this valley for about three miles in about the same course we ascended by an easy grade upon high prairie, somewhat rolling, but eligible for a road without grading, over which we passed to Ayoway creek, at a distance of $7\frac{6}{10}$ miles ; thence up Ayoway creek valley N. 69° W., $11\frac{2}{10}$ miles ; thence north seven miles over rolling prairie, somewhat rough, on to Lime creek. This direction was taken so as to avoid what is known as the Lime creek hills, which cover an area of about eight miles square. They are cone-like in form, with but little vegetation, very precipitous and rough from washings by the rain. The ravines are short and abrupt, forming deep gulches. Through these hills there is a circuitous divide, or narrow ridge, very hilly, with a rough surface, caused by washing, over which a road, in my opinion, is impracticable, on account of the increased length of the road, the narrowness of the top of the ridge, the abrupt ascents and descents, and the unevenness and roughness of the surface. From Lime creek we passed, in a westerly course, over a divide, into the Missouri bottom, subject to overflow, which we soon left for the bluffs. Passing over these bluffs, at a distance of about ten miles from Lime creek, we came upon a high prairie, slightly rolling, looking down upon Bow creek valley to the westward about two miles ; here we changed our course to N. 35° W., and at the distance of three miles we came into the Bow valley, which, at this place, maintains a width of about one mile ; thence along the valley in the same course about four miles to the crossing of Bow creek. Here we crossed upon a temporary bridge, from which we bore N. 45° W. up the valley of a very sluggish stream (a tributary of the Bow) for about four miles ; thence S. 70° W. on a level prairie to a small creek, believed to be the west branch of the Bow, which we crossed by fording at a distance of nine miles from the main Bow. In looking immediately to the west we saw nothing but sharp cone-like hills, which induced us to take a course S. 45° W., along and over a divide three miles to a small stream, with water clear and cold, to which we gave the name of Campbell's run. Here we found a spring running from a chalk bank ; the water was excellent and very cold. We again started due west, crossing the run at a ford with a stone and gravel bottom, and passing up a wide ravine bearing to S. of W., and down another we came, at the distance of $3\frac{1}{2}$ miles, upon the valley of a creek called by us Smyth's creek ; the banks of this creek were high and perpendicular. Passing up the valley nearly south for about three miles, we here unhooked our horses from the wagons, and, after crossing the horses, we attached ropes to our wagons, and with the horses pulled them over. We again started on a westerly course and soon reached a high divide, the general direction of which appeared to be about NE. and SW. To

the westward, as far as the eye could reach, we saw nothing but a succession of hills and ravines, with a range at the horizon, supposed to be about twenty miles distant, much higher and more abrupt in appearance than those in our immediate vicinity. On looking to the N. and NW., at a distance of from five to eight miles, we could distinctly trace the meanderings of the Missouri river. We here became confirmed in the opinion entertained after leaving the Bow valley that an eligible route for a road could not be obtained in the direction of the l'Eau qui Court from Ayoway Creek, unless we should be able to find streams, the general direction of which should be to the north of west; unless, indeed, we should pass much further to the south than the point to which we were to run would justify. We were satisfied that such streams were not likely to be found so near the Missouri. We therefore kept upon the divide, running in a southwesterly direction, surveying minutely the character of the country at every point of the compass. Immediately to the SW., we saw (what we afterwards found to be very noted) a lone tree about five miles distant, standing at the head of a ravine, perhaps fifty feet higher than the divide upon which we then were, and a few yards to the south of this tree the divide appeared to reach its greatest altitude. From this point we could view the whole surrounding country; to the N.NW. and W. we could see nothing but interminable hills and ravines, whilst in the distance we still observed this range of hills bearing apparently SE. and NW.; to the south, whilst the general appearance of the country was rough and broken, the hills gave evidence of more regularity, and to the SE., at some distance, we discovered and particularly noted a valley of considerable extent bearing E. and W., the waters evidently flowing to the east. Upon reading the odometer we found we had travelled eleven miles from the crossing at Smyth's creek. Still continuing on the divide, we saw to the south of west a grove of timber, which we reached about sunset, having travelled four miles since the last reading of our odometer. Here we found a beautiful grove, which we afterwards learned was called "Secret Grove," entirely surrounded by high hills, except the opening toward the north made by the ravine in which the grove is situated. The bed of the stream was dry at this time, but we found a deep gulch filled with water, sufficient for ourselves and horses. We crossed the ravine upon a temporary bridge constructed by our party, and bearing to the west we ascended a high ridge, from which we again saw to the N.NW. and W. the same high range of hills observed before; and in looking down irregular ravines at several points as we passed to the SW., we discovered timber marking the course of a stream which we had good reason to believe would be found difficult to cross. We therefore continued our course to the southwest, toward a high bluff bank in the distance, crossing a small run (which we afterwards ascertained to be the east branch of Bazil creek) and valley at a distance of eight miles from the grove. Whilst it was observed that this valley led in the direction of our proper route, it also led us down upon the creek that we were avoiding or trying to head, which we supposed could be done at or near the bluff banks. Continuing in the same course, we passed across a valley without water and up a ravine to the south of the bluff

bank until we reached a high divide, when we struck an old Indian trail, now almost obliterated. We followed this trail on the divide in about a due west course on down a ravine to the valley of Bazil creek, having travelled fourteen miles since we crossed the east branch. This creek affords more water than any stream crossed since leaving the Platte, with, perhaps, the exception of the Papillion. The banks are of medium height, along which are found a few groves and isolated trees. The water is twenty-five feet wide, muddy and swift, with a depth of from ten to twenty inches, and a bottom of quicksand. The valley is from three-fourths to one mile wide, lying in a regular curve, and from the evenness of its surface, its proximity to water, and the richness of its soil, it promises to the farmer an easy cultivation and an abundant harvest.

Passing down the valley at the distance of three-fourths of a mile we again crossed the east branch upon a temporary bridge raised by our party, and after ascending a ridge to the north we discovered the general direction of the valley to be about northwest; passing still to the north, for the purpose of finding a divide running parallel with the creek, we headed several deep ravines, and came, at a distance of about five miles from the east branch, upon the expected divide, where we also found a trail. From this point, in a direction a little north of west, we had full view of the Missouri river, distant about five miles. We followed this divide in nearly a west course until we passed down a ridge terminating upon the valley of the Bazil, and found our odometer indicated that we had travelled a distance of three miles since our last reading. The character of the Bazil was observed to be the same as above; the current very swift, no still water, and a hard quick-sand bottom, interspersed with small gravel. We here forded the creek without difficulty, and found a small cabin and a corn-field in the valley to the west of the creek. We ascertained that the east branch put into the Bazil about six miles above our place of fording, and that we were about one mile from the Missouri river, up the bottom of which we could not pass on account of the drift wood and under brush.

We ascended a high ridge to the westward, precipitous and winding, with abrupt ascents and descents for about two and a half miles, having in full view, a little to the north of west, the Missouri and the Neobrara. Leaving this ridge we passed over the level prairie bottom of the Missouri, a distance of about one and a half mile, to a steam saw-mill recently erected on the town site of Neobrara; from here, in a due west course along the bottom, at the distance of two miles, we struck the mouth of the Neobrara, having travelled since we left Dakota City the distance of 130 miles.

Map makers and geographers have been greatly at fault in the character and course of the Neobrara towards its mouth. Lieutenant Warren, United States topographical engineer, being more accurate, indicates a southern bend to this river of about twelve miles, whilst others give a southern bend of from twenty to thirty miles. We found that the Neobrara, at a point where it diverges the furthest to the south, was distant about four miles from, and immediately south of, its mouth, forming between these points a regular arc, and its greatest

divergence is about one mile from a line connecting the points of the arc. The course of the river from a point eighty miles from its mouth is due east—say seventy-six miles—to the bend, where, running to the north four miles in the manner above described, it discharges its waters into the Missouri. The valley, I am assured by a gentleman of intelligence and undoubted veracity, who has travelled upon both sides of the river, maintains its width of from one to one and a half mile for the distance of eighty miles, with numerous small streams putting in upon either side; the most of which, however, he represents to come in upon the south side. About seventy miles from the mouth pine timber is found in the ravines and gulches leading into the valley, and to the westward it is reported that pine is found in great abundance. The current in this river is as rapid as that of the Platte, with quicksand bottom; the water has a muddy appearance, but of lighter color than the Missouri or Platte. At a point two miles above the mouth of the Neobrara, and the point to which we propose to locate the road, we found the bed of the channel to be 320 paces wide, 140 of which was covered with running water, with an average depth of sixteen inches. Upon our return we started from a point upon the Neobrara, two miles from its mouth, running due east four miles, when we again ascended the abrupt hills, impracticable for a wagon road, over which we passed to Bazil creek to a good ford about one and a half mile below the ford we crossed in going west; passing over the valley we reached the bluffs to the eastward of the creek, about three miles from where we left the Missouri bottom. Having, in our reconnaissance west, noted the general direction of the valley of the east branch of the Bazil, and also the direction of the heading of the west branch of the Bow, we felt satisfied that if we could, by an easy grade, pass over the divide we should find a natural route, not only practicable, but highly eligible for a road, with but little cost of construction; we therefore greatly desired to reach this valley. We passed up and along the divide south 80° east three and a half miles, when we discovered to the southeast a ravine leading on to the valley of the east branch of the Bazil, which was about one and a half mile distant, and at a point about two miles from the confluence of the east branch with Bazil creek.

A road nearly level can be obtained by a small expenditure from the Neobrara, due east along the Missouri bottom, to Bazil creek, estimated at five miles; thence up Bazil valley south 70° east five and a half miles to valley of east branch; then up this valley two miles to the intersection of the travelled route. We travelled up this valley south 80° east thirteen miles to the divide, which we found to be about one mile to the southwest of Secret Grove; thence along the divide south 55° east one mile to a dry ravine of an easy grade, somewhat irregular at first, but directly putting into the valley of the West Bow, when we travelled due east for seven miles to a grove of timber. Our direct route here would have been to cross the creek and have continued our course about east; but failing to find a crossing, and observing that the valley made a bend to the south, we kept along the valley to the north of the creek, bearing north 70° east four and a half miles; here we changed our course with the valley due east

three and a half miles to the crossing of the creek upon a very good ford. The valley here was about three-fourths of a mile wide, and leads off from the creek south 80° east upon a level prairie, resembling somewhat a large valley, twelve miles to the Middle Bow. The route, so far, with the changes indicated on Basil creek, forms a natural route for a road for about fifty-three miles, with but three bridges to construct, and the only grading required being to cut a side road for a few rods along Basil creek, where it washes against the hills. We here changed our course to north 65° east over a divide one mile to East Bow; up a ravine to the high level table land three and a half miles; thence south 70° east, on the table land four miles, to a ravine leading down on to Lime creek valley; thence north 45° east three-fourths of a mile to a ford. Immediately after crossing the creek we changed our course to south 45° east up a valley winding and irregular, three miles to the divide, between Lime and Ayoway creeks; thence about south 10° east down a ravine leading into the valley of Ayoway creek, and along the valley five and a half miles, where we intersected the route we travelled upon to the west; thence south 60° east over this route, along Ayoway creek $11\frac{2}{3}$ miles, to the crossing; thence by our former route over divide to Elk creek valley; down the valley and over the divide to the Missouri bottom; and thence to Dakota City, $20\frac{2}{3}$ miles; making the distance upon our return from the Neobrara to Dakota City about 103 miles.

The route from the Middle Bow to the head of Ayoway valley, about twelve miles, was not entirely satisfactory to me, and I am confident, when we come to make a more critical examination, we shall find a more direct and feasible route for the location of the road.

With this exception, from the character of the country, the comparatively few bridges to construct, the feasibility of a good road without grading, and being almost direct, I cannot hesitate to respectfully recommend the location of the road upon or near the route passed over from the Neobrara to Dakota City.

The great advantage of this route, in addition to the above considerations, is in the fact that at least eight-tenths of the route passed over a district of country in the immediate vicinity of which the lands are well adapted to farming purposes. The valleys upon the whole route are not only beautiful, but, receiving, as they do, the washings from the surrounding high lands, they are composed of a very rich loamy soil, and will yield the most abundant harvest to the husbandman. Whilst the timber is scarce, I think, by economizing, sufficient can be found upon the Missouri bottom and in the gulches leading into the Missouri and the small tributaries, for all practical purposes.

Between the Running Water (l'Eau qui Court) and Dakota City there are fifteen bridges to construct, with lengths varying from ten feet to one hundred feet, and estimated at from \$75 to \$1,200; for a detailed statement of which, and the facilities for constructing the same, I beg leave to refer to the report of my engineer hereto appended, marked Appendix A.

The grading upon this route will consist of a side-cut along the Basil at three or four points where the creek washes against the bluffs,

say in all sixty rods; the grading a side-cut just before passing into Elk Creek valley, and cutting down the banks upon Lime creek, Bazil creek, and several dry ravines, together with the earth work necessary for the embankments to the bridges, which in all is estimated at \$1,775.

The total estimate for bridges is \$4,850, which, added to the estimate for earth work, would make the sum of \$6,625. The cost may slightly exceed the estimate, owing to a difficulty in obtaining timber, the probable inclemency of the weather, and the remoteness from settlements. These estimates are believed to be the actual cost, providing the work shall be done under the superintendence of the department. At least 100 per cent. would have to be added to the estimates above, as well as those heretofore given, to induce contractors to undertake the work. In this country they expect to make a small fortune in every contract with the government.

I have pursued the most rigid economy, consistent with an efficient discharge of my duties, with a view of carrying out the instructions of the department, in applying the greatest amount of the appropriation to actual road-making, and avoid involving the department in any deficiency. In economizing the funds we were driven to the expedient of somewhat increasing the length of the road for the purpose of avoiding deep ravines, and, in several cases, abrupt ascents and descents. This we have not done, however, to an extent that will materially injure the character of the road either as to length or directness. We find it necessary, also, to cross Lime and Bazil creeks by constructing fords, these being the only streams upon the route from Dacota City to the Running Water that will admit of fording. To these can be obtained a good sand and gravel ford; the other streams have high banks and soft mud and quicksand bottoms, rendering a ford not only impracticable but dangerous.

The present estimate, \$6,625, for bridges and grading upon the route from Dacota City to the Running Water, added to the estimates heretofore made, \$15,000, would make the gross sum of \$21,625, which, deducted from \$27,000, the sum ordered to be expended upon the road, would leave the sum of \$6,375 to meet the expenses of locating the road, and the loss upon the sale of the stock and materials used in the construction of the same.

In my report of the 10th of July I proposed to make a reconnaissance of this route along the divide upon what is known as the "Poncas trail," and suggested that, from report, I was led to believe that the increased length of the route, from its windings and the entire absence of water, would be an insuperable objection to locating the road upon this divide. The examination confirmed the truth of this report, and I am of opinion that the location of the road upon that route would be of no practical benefit to the settlers of the Territory, afford no accommodation to the emigrant or traveller, and in no way meet the just expectations of the department. In view of these facts, I remain of the opinion expressed in my report of the 10th of July, that the proper route for the location of the road from Omaha City to Dacota City is upon or near the route of the territorial survey, a map of which was forwarded to the department. Since my return I have been enabled to make further and satisfactory examinations of the Platte

river, and find a point for a good ferry at the distance of about three miles from its mouth. I would, therefore, respectfully recommend the location of the road upon or near the route, *via* Bellvuee, from the Platte river to Omaha City.

This route leads across the Platte valley and Pappillion Creek valley for about five miles; crossing over a divide for $1\frac{1}{2}$ mile, we come upon Mud Creek valley, upon which we travel for about 4 miles; thence over a divide, by an easy grade, of $1\frac{1}{2}$ mile to Omaha City. The route is nearly direct, and, with the exception of the two divides spoken of, is level.

All of which is respectfully submitted.

I have the honor to be, very respectfully, your obedient servant,

GEO. L. SITES,

Superintendent Nebraska Wagon Road.

HON. JACOB THOMPSON,

Secretary of the Interior.

APPENDIX A.

BELLEVUE, August 10, 1857.

Statement of the number of bridges between Dacota City and the Running Water, (l' Eau qui Court,) with an estimate of the cost and the facilities for constructing the same.

Slough.....	bridge	15 feet, timber	1 mile, steam saw mill	1 mile.....	\$100
do	"	15 " " "	1 " " "	1 "	100
Creek	"	15 " " "	1 " " "	2 "	100
Ayoway creek.....	"	70 " " "	$\frac{1}{2}$ " " "	$\frac{1}{2}$ "	950
Slough.....	"	15 " " "	2 " " "	$1\frac{1}{2}$ "	100
Creek.....	"	25 " " "	4 " " "	3 "	250
Slough.....	"	20 " " "	5 " " "	$3\frac{1}{2}$ "	150
Creek.....	"	15 " " "	10 " " "	9 "	100
Deep ravine, or gulch ;					
some water; rough bridge	"	30 " " "	2 " " "	13 "	150
Do do	"	30 " " "	1 " " "	12 "	150
Branch.....	"	10 " " "	1 " " "	10 "	75
East Bow.....	"	30 " " "	2 " " "	9 "	400
Bow creek.....	"	100 " " "	1 " " "	8 "	1,200
West Bow.....	"	50 " " "	8 " " "	20 "	800
East Branch Basille.....	"	15 " " "	15 " " "	15 "	100
Ravine in Basille valley.	"	25 " " "	5 " " "	5 "	125

Grading estimated at..... 4,850
1,775

6,625

Very respectfully,

HENRY B. SMYTH,
Engineer.

GEORGE L. SITES,

Superintendent Nebraska Wagon Road.

WASHINGTON CITY, D. C., *March 4, 1858.*

SIR: In obedience to your letter of January 7, 1858, directing me to "furnish the department, at the earliest practicable period, a report of your (my) operations, and a map of the same, from the commencement of your (my) work to the close; also a statement of the amount expended and the balance remaining in your (my) hands at the present time, together with a statement of your (my) opinion in regard to the resumption of operations in the spring," I had the honor, under date of January 14, 1858, to furnish you with the amount of the appropriation expended, the amount remaining in my hands, together with a statement of the available means yet remaining of the appropriation applicable to the construction of the road, as also my opinion in reference to resuming operations in the spring. I now have the honor to report my operations, in detail, from the commencement of the work up to the present period.

On the 4th day of June I reached Omaha City, Nebraska Territory, and, under my instructions of the 15th of May, repaired to the vicinity of the mouth of the Platte river to await the arrival of my engineer. Mr. Smyth arrived on the 25th, and on the 26th of June we started upon our reconnaissance, for the full particulars of which I beg leave to refer to my reports to the department, dated, respectively, the 10th July and the 10th of August, 1857. We commenced the location of the road on the 25th day of August, and completed it on the 12th day of October, 1857.

In the location of the wagon road from the Platte river, *via* Omaha Reserve and Dakota City, to the Running Water river, we started upon the north bank of the Platte river, about three miles from its mouth, at a post marked "Commencement of wagon road from Platte to Running Water," and running a little to the east of north we passed over the valleys of the Platte river and Pappillion, *via* Bellcone, to a high rolling prairie, thence on to Mud Creek valley, and over a divide, reaching Omaha City at the distance of 13 miles from the Platte, about 9 miles of which is over the rich bottom lands of the above named valleys, and the remainder over a delightful rolling prairie of a gentle grade, making the route to Omaha City highly eligible for a wagon road, with but a small expenditure, exclusive of the bridge across Pappillion creek.

Passing to the north through Omaha City, and crossing over a small creek upon the bridge erected upon the military road from Omaha City to Fort Kearney, we run along Twenty-fourth street, in the city of Saratoga, to its terminus, thence north $23\frac{1}{2}^{\circ}$ west, to the foot of and through Main street, in Florence, over the second bottom lands of the Missouri, perfectly level, crossing Spring and Mill creeks, and reached the bluffs of the Missouri at a distance of five miles from the military bridge. Here we crossed a high ridge and passed down on to the valley of Poncas creek; crossing Poncas and following the valley for one mile we again crossed a divide, somewhat rolling, over on to the valley of Deer creek; thence along the valley and over Deer creek, where we again came upon the second bottom lands of the Missouri; crossing Turkey creek we reached the town of Fort Calhoun, at the

distance of 14 miles from Omaha City and 38 miles from the Platte river.

Passing through Thirteenth street, in Fort Calhoun, and changing our course to west of north, still continuing upon the second bottom or bench lands, we crossed Moore's creek, Mill creek, and Glover's creek, and reached the city of De Soto, distant from Omaha 19 miles and from the Platte 33 miles.

We again came upon the highlands immediately adjacent to the river, passing over Ohio street in through the town of De Soto, and after continuing upon the highlands for one mile we descended again upon the second bottom or bench lands; crossing South creek we reached the town of Cumming City, distant 40 miles from the Platte. Thence north, on Clay street, through Cumming City; thence bearing to the W. of N., we crossed North creek, Stewart's creek, New York creek, Pike creek, Spring run, Dry creek, and Tekama creek, to the town of Tekama, distant from the Platte 55 miles; thence north, on Thirteenth street, through Tekama; bearing again to the W. of N., we crossed Silver and Elm creeks and reached Decatur City, lying to the south of and adjoining the Omaha Reserve, distant from the Platte 72 miles. Running up Broadway, through Decatur City and over Wood creek, we passed into the Omaha Reserve; up Wood creek valley for about four miles; thence over a divide of an easy grade on to the valley of the South Blackbird; thence along this valley to the crossing of the creek at the "Omaha Village;" here the valleys of the South and North Blackbird creeks come together; crossing the North Blackbird we reached, by a gentle grade, a divide, nearly level upon its surface, but somewhat winding, upon which we continued for about 16 miles, where we passed down from the bluffs to the Missouri bottom, and crossing Omaha creek we reached the town of Omadi, distant from the Platte 101 miles; thence, on Eighth street, through Omadi to the south end of Twentieth street, in Dakota City, distant from the Platte 105 miles.

The route from one mile north of De Soto to the Omaha Reserve, a distance of about 37 miles, was over the bench lands of the Missouri; a rich loam and sandy soil, unsurpassed for farming or grazing, and forms a direct and beautiful road. Through the reserve we wind along the divide which separates the waters which flow into the North Blackbird and Omaha creeks from those which flow directly into the Missouri.

Upon either side of this divide the country is rough and broken, and to the east, skirting upon the river, timber is found in considerable quantities; descending the ridge we pass over the first bottom lands, of great richness and fertility, but rather too low for a good road during the wet season; this brings us to Dakota City. From Dakota City, continuing over the first bottom lands, we reach St. John's City, at the distance of eight miles from Dakota City; crossing over a divide, we passed down upon and along the valley of Elk creek; thence over a rolling prairie and a divide to the valley of Ayoway creek; thence up this valley for about 16 miles, and over another divide, crossing Lime creek, to a high level prairie; thence, crossing East Bow creek and Main Bow creek, we pass over a beautiful, dry,

Bridge across Tekama creek, 59 feet long.

Bridge across Spring branch, 17 feet long.

Bridge across a slough, 10 feet long.

Bridge across a slough, 7 feet long.

Bridge across Silver creek, 54 feet long.

Bridge across Elm creek, 27 feet long.

• Bridge across Wood creek, 56 feet long.

Bridge across South Blackbird creek, 50 feet long.

Bridge across North Blackbird creek, 50 feet long.

Bridge across Omaha creek, 68 feet long.

Herewith you will please find a map of that part of Nebraska Territory through which this road runs, exhibiting the route of the road and the general topography of the country. This map has been carefully compiled from the United States surveys and from the best authorities at our command, to which is added our own personal observations of the country.

I have the honor to be your obedient servant,

GEO. L. SITES,
Superintendent.

Hon. J. THOMPSON,
Secretary of the Interior.

Having completed the work which called me to Washington, I have the honor to await the further orders of the department.

G. L. S.

LANCASTER, OHIO,
January 20, 1859.

SIR: Enclosed herewith please find my report of operations upon the wagon road from the "Platte river, *via* Omaha Reserve and Dacota City, to the Running Water river."

I have the honor to be, very respectfully, your obedient servant,
GEO. L. SITES.

Hon. JACOB THOMPSON,
Secretary of the Interior.

LANCASTER, OHIO,
January 20, 1859.

SIR: Under date of the 8th May, 1857, I received the appointment of superintendent of the wagon road from the "Platte river" *via* Omaha Reserve and Dacota City, to the Running Water river," for the construction of which the sum of thirty thousand dollars was appropriated.

Under instructions from the Secretary of the Interior, dated May 15, 1857, I repaired to the Platte river, and after a careful reconnais-

sance (for the particulars of which please see my reports, dated, respectively, July 10 and August 10, 1857,) I proceeded to locate the road in accordance with the law of Congress, making the appropriation and the instructions of the department, and completed the same over the entire route on the 12th day of October, 1857, for the details of which I beg leave to refer to my report of the 4th March, 1858.

My further operations upon the road up to the 21st December, 1857, when the inclemency of the season forced us to abandon the work, were communicated to you under date of the 4th March, 1858.

Under instructions from the department of the 19th March, 1858, I again commenced operations upon the road about the 1st April, 1858. The work consisted in grading and the construction of bridges.

The first grading done was a side cut along a bluff bank, three miles north of the Platte river, and near Pappillion creek bridge, of about one-half a mile in length, at a cost of a little less than \$250, besides the use of our own teams. Between the Platte river and Pappillion creek we erected three small bridges across a slough, a ditch, and a ravine, to enable the travel to go directly upon the line of the road, and erected two others between Omaha City and Florence. The bridge across New York creek, from a defect in one of the large iron rods let down during the winter, a new rod was procured, and the bridge again erected out of the old material, with the exception of the rod and two or three new timbers. The screw of the defective rod on examination was found to have been burnt in its manufacture, so that the thread gave way with the weight of the structure. This is the only instance where the iron has so far proved defective. The remainder of the bridges constructed last fall, which comprise all those between the Platte river and Dakota City, were found upon our arrival in the Territory to be in good condition, and so continued until about the last of May, when the incessant and unprecedented rains, then of many days' duration, began seriously to threaten the bridges along the whole line; about this time, and when the earth was perfectly saturated with water, there came a heavy rain-storm which flooded and deluged all the low lands in the neighborhood of the Omaha Reserve, causing the North and South Blackbird creeks to rise to an unusual height, and we simultaneously lost the two bridges across those streams by the combination of drift-wood and high water. I was informed that the violence of the storm was such that in the space of a few hours the water in North Blackbird creek raised to the height of thirty feet above low water mark.

The next disaster to our bridges was at Omaha creek, lying to the north of the reserve, and in Dakota county. This creek formerly meandered about twelve miles below the town of Omadi, where it put into a bayou or lake with an outlet into the Missouri river, but some two years since this creek made a cut off just at the town of Omadi, and at the distance of a half a mile found its way into the Missouri.

This cut-off threw the whole fall of the stream, in its course of twelve miles, into that of a half mile, thereby so increasing the rapidity of the current as to cut the bed of the channel. About this time a milldam was erected a short distance above this cut-off, which

checked the current above, whilst the water still continued to cut the bed of the stream below the dam.

Our bridge was erected about one mile above this dam. During the heavy rains and storms this dam gave way, and the deepening of the channel, which was from eight to ten feet, continued up the creek and above the bridge, and the banks, being composed of a loamy soil, and softened by the constant rains, commenced falling in, and in a few days reached the bridge. To prevent the timber and lumber from being carried away a party of our men were detailed to take the bridge apart and secure the materials. Upon a careful re-examination of the creek at, above, and below the site of the bridge, it was found impracticable, without the aid of a pile-driver, which was not at our command, to reconstruct this bridge. The increased width of the stream from bank to bank (from 80 to 90 feet) was too great to admit of a single span, and the nature of the lower banks, which had been the bed of the stream, were too spongy for an abutment, without piling, to bear the superstructure. Under these circumstances the materials were piled up, so as to protect them from the weather, and left near the former site of the bridge. This was a good bridge, 68 feet long, very useful to the settlers, and necessary to emigrants; it was, therefore, with deep regret I abandoned the reconstruction of this bridge.

Owing to subsequent high waters we lost the bridges across New York creek, Pike creek, and Spring creek.

Of the bridges that were carried away by high-water we reconstructed those across North and South Blackbird creeks, changing the former from a 50 foot bridge to one of 70 feet, and re-erected for the third time the one across New York creek. It will be recollected that the latter bridge gave way first, through the defect in the iron rod.

Considering the great amount of damage done by high water through western Iowa and Missouri, where scarcely a bridge was left standing, it should be a matter of congratulation that the bridges upon this road escaped with comparatively so small a loss.

It may be safely premised, after our experience of last summer, that no future high water will affect the bridges upon this road, unless it be by the washing of the banks, which, from the nature of the soil, it is not possible to guard against without involving a much larger expenditure of money. My own opinion is, that the bridges constructed and now remaining will continue permanent, with slight repairs from time to time, until the materials out of which they are constructed shall decay.

All of the streams between the Platte river and the south line of the Omaha Reserve, with but a single exception, were crossed where they run through the second bottom of the Missouri river, the waters of which, in its greatest height, never reach these points of crossing. The soil is a rich, black sand and loam, very fertile and productive, the banks of the streams sparsely spotted with timber, and covered with a luxuriant growth of weeds, attaining to a height of from 10 to 12 feet, and which last season extended to the water's edge. This growth of weeds, together with the serpentine course of the streams,

account for the sudden and unprecedented rise in these streams; and yet another cause conduces much to increase the volume of water which in a few years will be obviated. I allude to the yet comparative small quantity of land in cultivation towards the source of these streams.

The well-matted prairie sod forms an excellent bed to carry off the water, directly after its fall, to the streams. The opening of these lands to cultivation, while they will richly repay the husbandman, it will also materially and beneficially affect these high floods, and be highly advantageous to the bottom lands.

Springs of beautiful, clear, cold water universally form the sources of these creeks; in fact, I know of but one exception in the whole country, that of Fish creek, which lies to the east of the road, and which takes its rise from a slough formed by the discharge of several creeks without any visible inlet. Quite a number of small creeks are lost entirely in the first bottom of the Missouri before they reach that stream.

The lands lying between the reserve and the Platte river, and in the vicinity of this road, are either held by pre-emption or by what is familiarly known as claims, a large portion of which are in cultivation; it is unsurpassed in beautiful scenery, or in the richness and productiveness of the soil; it is destined to be a great producing country, and will command the attention both of the agriculturist and stock grower.

This road and the facilities offered by the bridges are of immense benefit to the settler and the emigrant.

During the year 1857 we constructed the following bridges:

Across Pappillion creek	68 feet long.
slough	16 " "
slough	15 " "
Spring creek.....	45 " "
Poncas creek.....	34 " "
Turkey creek	39 " "
Mill creek	54 " "
Glover's creek.....	20 " "
Branch creek	14 " "
South creek.....	29 " "
North creek	34 " "
Stewart's creek.....	29 " "
New York creek	48 " "
Pike creek.....	39 " "
slough	10 " "
Spring run.....	27 " "
Dry creek.....	19 " "
Spring branch.....	12 " "
Tekama creek	59 " "
Spring branch.....	17 " "
slough.....	10 " "
slough.....	7 " "

Across Silver creek	54 feet long
Elm creek	27 " "
Wood creek.....	56 " "
South Blackbird creek.....	50 " "
North Blackbird creek.....	50 " "
Omaha creek.....	68 " "

During the past summer we have constructed upon this road the following bridges:

Across slough	15 feet long.
ditch	10 " "
ravine.....	18 " "
run and ravine	28 " "
run.....	30 " "
ravine and gulch.....	55 " "
ravine and gulch.....	20 " "
Badger creek	20 " "
Ayoway creek	56 " "
Do. do.....	20 " "
Do. do.....	20 " "
Do. do.....	20 " "
Do. do.....	30 " "
ravine	15 " "
Ravine creek.....	25 " "
Northwest Ayoway.....	30 " "
slough	10 " "
ravine and gulch	35 " "
Spring creek	20 " "
Dry ravine.....	15 " "
East Bow creek.....	50 " "
Middle Bow creek	78 " "
West Bow creek	50 " "

The road, as located through the Omaha Reserve, passes along a high divide, and as it approaches Dakota City, which is situated upon the Missouri bottom, we had to descend a bluff bank of about 350 feet in height. This bluff was graded, under the immediate supervision of the engineer, by winding the hill with a side cut, in length one-half a mile, with a grade somewhat heavy, but over which a loaded wagon may pass without much difficulty. This, together with the grading near Pappillion creek, above referred to, was the principal part of earth work done during the season, with the exception of the necessary grading and embankments leading to and from the bridges.

By reference to my returns of the sale of property belonging to the United States, then in my possession, it will be seen that the sales amounted to the sum of \$1,595 50. Owing to the great scarcity of money, I had every reason to believe that, at public auction, I would not have realized more than a nominal sum for the property. I therefore, under the verbal instructions of the general superintendent,

offered the same at private sale—a part of which was so disposed of—and, in the meantime, I caused handbills to be printed and sent to the various parts of the Territory and adjoining Iowa, giving notice of a public sale of the property at Omaha City on the 15th September, 1858. The property was offered on the 15th and 16th, but only a nominal bid was received. The offering at private sale continued until all the property was disposed of for a fair consideration, considering the scarcity of money.

In reference to the location of the road, the work done, the expenditure of the money, and the management of the road generally, I submit the following extract from a report of a select committee of the council of the Territory of Nebraska, and unanimously adopted by that body, who were appointed to examine into and report the facts, &c. :

“The select committee to whom was referred that portion of the governor’s message relating to the wagon road from the ‘Platte river, via Omaha Reserve and Dakota City, to the Running Water river,’ and for which \$30,000 was appropriated by act of Congress approved March 3, 1857, respectfully report :

“The entire length of this road is two hundred and eight miles, passing through a country of unsurpassed beauty and fertility; rich in mineral wealth. Its course being almost parallel with the Missouri river, it crossed all the streams putting into said river. Being eligibly located, the road is of incalculable benefit and importance to the Territory, and its advantages can only be properly appreciated by the emigrant and hardy pioneer as he wends his way westward in quest of a home he intends to reclaim from the possession of the red man, and improve, beautify, and adorn as a resting place for himself and those dependent upon his exertion and labor. In accordance with the direction of the Secretary, during the past year the road, throughout the entire distance, was opened and located by Henry B. Smyth, an engineer appointed by the governor, under the direction of the superintendent.

“Under instructions of the Secretary of the Interior, no bridge was to be constructed when a passable ford could be obtained. During the summer and fall of 1857 passable fords were found across Moore’s creek, Lime creek, and Bazille creek. Subsequent experience has shown the necessity of bridges across these streams; regarding not only the convenience but the safety of the traveller. A change of the line of road as located suggests itself from the frequent rains of the past spring and summer between New York creek and Tekama, which will incur the erection of two bridges.

“The bridges which ought to be constructed to complete the whole line of road, as originally contemplated by the Secretary of the Interior, are as follows—the probable cost and length of which from estimates furnished by the superintendent—viz :

Bridge across Moore’s	creek,	65 feet,	estimated cost.....	\$1,000
“ “ Pike’s	“	39 “	“ “	650
“ “ Spring	run,	27 “	“ “	450

Bridge across Spring	creek,	40 feet,	estimated cost.....	\$650
“ “ “	“	34 “	“ “ “	600
“ “ Omaha	“	100 “	“ “ “	1,500
“ “ Lime	“	50 “	“ “ “	850
“ “ Bazille	“	125	{ including piling } and grading, } ..	4,000
“ “ East Bazille	“	40 feet,	estimated cost.....	700
Six bridges across ravines.....				1,600
Grading and contingencies				3,000
Total estimate.....				15,000

" The above estimates are based upon the hypothesis that the government directly constructs the bridges. Should the contract system be adopted, from 40 to 70 per cent. should be added to the above estimates and cost.

" The sum of \$1,800 has been expended on grading, and the further sum of \$6,000 in opening and locating said road and the purchase of property to aid in its construction.

" In the opinion of your committee, the early completion of this road is of inestimable importance and benefit to the Territory at large. Eminently calculated to develop its many, varied, and rich resources which are only awaiting the hand of labor to bid them forth; the opening of a safe thoroughfare to the rich and fertile valleys of the Running Water, the White Earth and the numerous streams that bring them tribute.

" Your committee would therefore recommend the passage of a joint memorial and resolution asking for an appropriation to aid in the completion of said road, for the bridging of the l'Eau qui Court, and the extension of the road to the military post of Fort Randall.

" In the opinion of your committee, the Territory is deeply indebted to the superintendent for the efficient and energetic management and early completion of a work so eminently adapted to the development of our resources, and for the economical and strict application of the funds appropriated, to the actual opening and construction of the road."

The erection of the bridges above estimated for are necessary to complete the road in the manner originally designed by the act of Congress. It will be of incalculable benefit to the Territory, and will induce an earlier settlement and development of the country. The pecuniary condition of the people of the Territory, brought on by the exorbitant prices they were compelled to pay for the necessaries of life, will not warrant an undertaking on their part to construct the bridges required for the accommodation of themselves, and indispensable to the emigrant; besides, some of these bridges are remote from settlements, and only of benefit to the traveller or emigrant.

The valleys of the several Bows and of the Running Water river are attracting settlers, notwithstanding the difficulties which now surround the upper part of the Territory. During the past summer about

seventy families, in wagons, accompanied with their stock, have settled in the valley of the Running Water. These hardy pioneers, while they brave the dangers and hardships of a frontier life, extending settlement and cultivation, require and should receive all the benefits that the government can consistently bestow.

In view of the great advantages that will accrue from so small an additional expenditure of money, I earnestly recommend an appropriation sufficient to complete this road as originally contemplated.

All of which is respectfully submitted.

I have the honor to be, very respectfully, your obedient servant,

GEO. L. SITES,

Superintendent Nebraska Wagon Road.

Hon. JACOB THOMPSON,
Secretary of the Interior.















REPORT
OF
THE SECRETARY OF THE NAVY,

IN ANSWER TO

A resolution of the Senate calling for a statement showing the names and appropriate description of all vessels of the navy of the United States which have been captured, lost, or destroyed, &c.

MARCH 1, 1859.—Read ; motion to print referred to the Committee on Printing.

MARCH 2, 1859.—Report in favor of printing the usual number submitted, considered, and agreed to.

NAVY DEPARTMENT,
February 26, 1859.

SIR: In reply to the resolution of the Senate adopted February 25, 1858, directing the Secretary of the Navy to "furnish to the Senate in tabular form a statement showing the names and appropriate description of all vessels of the navy of the United States which have been captured, lost, or destroyed," &c., I have the honor to submit herewith a tabular statement containing the information called for, so far as it has been practicable to obtain it from the files and records of the department.

With respect to so much of the resolution as inquires whether any prizes recaptured by the enemy in a neutral port "have been reclaimed from the enemy or from any neutral power," and whether any merchant vessel justly captured by the United States navy "has, from motives dictated by state policy, been taken from the captors and restored to previous owners," the department addressed a communication to the Secretary of State, a copy of which and of the reply is herewith transmitted.

The department has no official knowledge of any "ships-of-war or other armed vessels captured by our navy and subsequently taken into the service of the United States, failing a condemnation by our courts, or without a just and regular valuation of them having been made."

Information heretofore laid before Congress from this department and other sources, which appears to come within the scope of the present resolution, may be found in a printed form in the "American State Papers" volume of "Naval Affairs," pages 405, 415, 416. In

the case of the prize *Levant*, which was retaken by the enemy in a neutral port, the report of the committee of the House of Representatives was followed by an act of Congress, approved April 26, 1816, appropriating the sum of twenty-five thousand dollars for distribution among the commander, officers and crew of the frigate *Constitution*.

During the war with Mexico several prizes of inconsiderable value were taken into the public service, but it is believed that in every case there was a condemnation, an appraisalment, and payment of the appraised value.

In any case where a prize has been taken into the public service and paid for, whether under the special authority of Congress or otherwise, it would be difficult for the department now to determine from any information in its possession that the compensation to the captors was other than "fair or equitable."

I am, very respectfully, &c.,

ISAAC TOUCEY.

HON. JOHN C. BRECKINRIDGE,
President of the Senate.

NAVY DEPARTMENT, *March 11, 1858.*

SIR: By resolutions of the Senate agreed to on the 25th ult., the Secretary of the Navy is directed to furnish a statement of "the names, character, and force of all prizes of enemy's vessels-of-war captured by the United State's navy which were taken by said enemy in neutral ports, by which the captors were deprived of a right to property therein, which right was conferred upon them by the law regulating the apportionment and distribution of prize money arising from captures made by equal or inferior forces; whether prizes so taken have been reclaimed from the enemy or from any neutral power which has thus, in violation of international law, permitted prizes so situated to be carried from its port or ports by an enemy. And further, how or whether the series captors have been compensated or sustained in their right to property thus acquired; and so far as the records of this department may not supply the information, that he cause the same to be compiled from other sources (if such there be) worthy, in his judgment, of reliance, designating in such case the one from the other."

And he is further directed to state "whether any merchant vessel has been justly captured by the United State's navy which has not been sent home for judicial examination or condemnation, but which has, from motives dictated by state policy, been taken from the captors and restored to previous owners; whether any, and if any, a fair and equitable remuneration has been made to the captors for restorations thus made."

As the records of this department do not show in what cases reclamations have been made on foreign governments, founded on the re-capture in neutral ports of enemy's vessels-of-war captured by the United States navy; nor whether any merchant vessel captured by the United States navy has, from motives dictated by state policy, been

restored to previous owners, I have the honor to request, if the information required, or any part of it, exists in the Department of State, that it may be communicated to this department.

I am, very respectfully, your obedient servant,
I. TOUCEY.

Hon. LEWIS CASS,
Secretary of State.

DEPARTMENT OF STATE,
Washington, March 29, 1858.

SIR: I have the honor to acknowledge the receipt of your letter of the 11th instant, requesting certain information supposed to be in this department, called for by a resolution of the Senate of the 25th of last month. In reply I have the honor to inform you that, after the most diligent search, no information of the character desired can be found in this department.

I have the honor to be, sir, your obedient servant,
LEWIS CASS.

Hon. ISAAC TOUCEY,
Secretary of the Navy.

NAMES OF VESSELS CAPTURED, LOST, OR DESTROYED.

Statement of vessels of the navy of the United States which have been captured, lost, or destroyed since the year 1798.

Name of vessel.	Rate.	Guns.	Commanded by—	Captured, lost, or destroyed.	Where it occurred.	Time.	Remarks.
Albany.....	Sloop.....	20	Com. J. T. Gerry.....	Lost.....	Gulf of Mexico.....	Sept., 1854.....	
Alert.....	Ship.....	20	Alert.....	Broken up.....	Norfolk.....	1850.....	
Alligator.....	Schooner.....	4	Lieut. R. Bassett.....	Sunk.....	Port Royal Sound.....	July 11, 1814.....	Court of inquiry, December 13, 1822; conduct of Lieut. D. and crew praiseworthy.
Alligator.....	Schooner.....	12	Lieut. J. M. Dale.....	Lost.....	Carysfort reef.....	1822.....	
Alligator.....	Sloop.....	1	Sailing Master R. Sheppard.....	Captured.....	New Orleans.....	1814.....	
Argus.....	Ship.....	18	Master Com. W. H. Allen.....	Burnt.....	Washington.....	1814.....	
Argus.....	Sloop.....	16	Master Com. W. H. Allen.....	Captured.....	English channel.....	Aug. 14, 1813.....	
Boston.....	Ship.....	28	Com. G. F. Pearson.....	Burnt.....	Washington.....	1814.....	Court of inquiry, April 16, 1815; no blame, except of a seaman and boy.
Boston.....	Ship.....	18	Com. G. F. Pearson.....	Lost.....	Eleuthera, West Indies.....	1846.....	
Boxer.....	Brig.....	14	Lieut. J. Porter.....	Lost.....	Off Balise.....	1817.....	
Carolina.....	Schooner.....	14	Com. J. D. Henley.....	Blew up.....	New Orleans.....	1814.....	
Chesapeake.....	Ship.....	36	Captain J. Lawrence.....	Captured.....	Off Boston.....	June 1, 1813.....	
Chippewa.....	Brig.....	14	Lieut. G. C. Read.....	Lost.....	Unicos, West Indies.....	1816.....	
Columbia.....	Ship.....	41	Com. W. Bortum.....	Burnt.....	On the stocks.....	1814.....	
Concord.....	Ship.....	18	Com. W. Bortum.....	Lost.....	East coast of Africa.....	1843.....	
Congress.....	Ship.....	36	Captain J. Sever.....	Broken up.....	Norfolk.....	1836.....	
Cyane.....	Ship.....	34	Lieut. Sidney Smith.....	do.....	Philadelphia.....	1836.....	
Eagle.....	Steamer.....	2	Lieut. J. McCormick.....	Captured.....	Lake Champlain.....	Jan. 3, 1813.....	
Edith.....	Schooner.....	12	Lieut. J. Gallagher.....	Lost.....	California.....	1819.....	
Enterprise.....	Ship.....	18	Lieut. J. T. Shubrick.....	Lost.....	Little Quanaon.....	1823.....	
Etna.....	Ship.....	11	Lieut. J. T. Shubrick.....	Lost.....	At sea.....	1815.....	
Erie.....	Ship.....	18	Captain D. Porter.....	Broken up.....	New Orleans.....	1812.....	
Essex.....	Ship.....	32	Lieut. L. Kearny.....	Captured.....	Boston.....	1841.....	
Essex.....	Schooner.....	3	Lieut. L. Kearny.....	Lost.....	Valparaiso.....	Mar. 28, 1814.....	
Essex.....	Schooner.....	3	Midshipman S. M. Booth.....	Lost.....	Stony inlet.....	1814.....	
Ferret.....	Schooner.....	18	Master Com. J. Bainbridge.....	Captured.....	West Indies.....	1825.....	
Ferret.....	Schooner.....	18	Master Com. J. T. Newton.....	Blew up.....	Off Havana.....	April 20, 1814.....	
Fulton.....	Steamship.....	30	Lieut. A. E. Downes.....	Lost.....	Brooklyn.....	1829.....	
General Green.....	Ship.....	18	Captain C. R. Perry.....	Burnt.....	Off Charleston.....	1843.....	
General Green.....	Ship.....	36	Lieut. J. M. Gamble.....	Burnt.....	Washington.....	1814.....	
Greenwich.....	Ship.....	18	Lieut. S. Smith.....	Captured.....	Marquesas Islands.....	June 3, 1813.....	
Grolier.....	Sloop.....	3	Lieut. S. Smith.....	Captured.....	Lake Champlain.....	Aug. 10, 1813.....	
Grolier.....	Schooner.....	2	Lieut. D. Deacon.....	Broken up.....	Lake Ontario.....	1841.....	
Guarders.....	Ship.....	44	Lieut. U. P. Levy.....	Lost.....	Norfolk.....	Feb. 19, 1863.....	Court of inquiry, June 17, 1863; loss ascribable to greater degree of confidence in the pilot than is warrantable in any case.
Gun-boat No. 158.....	Gun-boat.....	1	Lieut. U. P. Levy.....	Lost.....	Bay of Honduras.....	1841.....	
Hebe.....	McHopper.....	4	McHopper.....	Lost.....	Danvers bay.....	1814.....	

Hornet.....	Brig.....	16	Master Com. O. Norris.....	Lost.....	Off Tampico.....	Sept. 10, 1859	Court of inquiry, Oct. 11, 1814; conduct of Lieutenant M., officers, and crew entirely approved.
Hornet.....	Schooner.....	5	.....	Broken up.....	Norfolk.....	1850	Court of inquiry, Sept. 9, 1814; no blame imputed.
Inaugural.....	Ship.....	36	Captain P. Fletcher.....	Lost.....	At sea.....	July, 1800.....	
Intrepid.....	Ketch.....	4	Master Com. E. Somers.....	Blew up.....	Off Tripoli.....	1804	
Java.....	Ship.....	44	.....	Broken up.....	Norfolk.....	1843	
John Adams.....	Ship.....	38	Captain C. Morris.....	Burnt.....	Hampden, Me.....	1814	
Julia.....	Schooner.....	2	Sailing Master J. Traub.....	Captured.....	Lake Ontario.....	Aug. 10, 1813	Court martial, Sept. 1844; Capt. Newton sentenced to suspension for two years from Oct. 19, 1844; remitted March 3, 1845; Chief Engineer John Faxon, Jr., sentenced to be admonished and suspended for one year; remitted March 16, 1845.
Louisiana.....	Ship.....	16	.....	Broken up.....	New Orleans.....	1851	Court of inquiry, Sept. 26, 1812; no blame imputed.
Lynn.....	Schooner.....	6	Lieut. J. E. Madison.....	Lost.....	At sea.....	1850	
Macedonian.....	Ship.....	38	.....	Broken up.....	Norfolk.....	1855	
Missouri.....	Steamship.....	10	Capt. J. T. Newton.....	Burnt.....	Gibraltar.....	1843	
Nautilus.....	Brig.....	12	Lieut. W. M. Crane.....	Captured.....	Off New York.....	July 16, 1812	
Natches.....	Ship.....	18	.....	Broken up.....	New York.....	1840	
Nonesuch.....	Schooner.....	14	.....	.....	.....	1856	
Ohio.....	Schooner.....	2	Sailing Master M. Cally.....	Captured.....	Lake Erie.....	Aug. 19, 1814	
Onkaybe.....	Schooner.....	1	Lieut. O. H. Berryman.....	Lost.....	Caracas E. W. I.....	1848	
Peacock.....	Ship.....	18	.....	Broken up.....	New York.....	1838	
Petritia.....	Ship.....	1	Lieut. W. L. Hudson.....	Lost.....	Columbia River.....	1841	
Philadelphia.....	Steamer.....	36	Lieut. S. B. Bissel.....	Sunk.....	Off Alvarado.....	1848	
Pickering.....	Ship.....	14	Capt. W. Bainbridge.....	Wrecked.....	Off Tripoli.....	1803	
Porpoise.....	Brig.....	12	Lieut. B. Hillar.....	Lost.....	At sea.....	1800	
Porpoise.....	Schooner.....	4	Lieut. W. Taylor.....	Lost.....	West Indies.....	1853	
President.....	Ship.....	44	Master W. K. Bridge.....	Lost.....	Bahias Pass, E. I. sea.....	Sept. 1854	
Princeton.....	Brig.....	9	Com. B. Decatur.....	Captured.....	Off New York.....	Jan. 15, 1815	
Rattlesnake.....	Steamship.....	14	.....	Broken up.....	Boston.....	1849	Court of inquiry, April 18, 1815; errors committed, but vessel not lost through intention or neglect.
Retallation.....	Brig.....	14	Lieut. J. Renshaw.....	Captured.....	At sea.....	July 11, 1814	
Revenge.....	Schooner.....	12	Lieut. W. Bainbridge.....	Captured.....	West Indies.....	1798	
Scorpion.....	Schooner.....	12	Lieut. O. H. Perry.....	Lost.....	Off Newport.....	1811	
Sea Hawk.....	Pilot boat.....	3	Lieut. Daniel Turner.....	Captured.....	Lake Huron.....	Sept. 5, 1814	
Sea Horse.....	Schooner.....	12	Passed Mid'n J. W. E. Reid.....	Lost.....	Off Cape Horn.....	1839	
Shark.....	Schooner.....	16	Sailing Master Johnson.....	Burnt.....	New Orleans.....	1814	
Siren.....	Schooner.....	12	Lieut. N. M. Howison.....	Lost.....	Columbia River.....	1846	
Somers.....	Brig.....	3	Lieut. J. N. Nicholson.....	Captured.....	At sea.....	July 19, 1814	
Somers.....	Schooner.....	3	Lieut. Conklin.....	Captured.....	Lake Erie.....	Aug. 19, 1814	
Spartan.....	Brig.....	10	Lieut. E. Semmes.....	Sunk.....	Off Vera Cruz.....	1846	
Sylph.....	Ketch.....	3	.....	Broken up.....	Norfolk.....	1820	
Tigress.....	Schooner.....	1	Lieut. H. E. V. Robinson.....	Lost.....	West Indies.....	1831	
Trautman.....	Schooner.....	1	Sailing Master Chapin.....	Captured.....	Lake Huron.....	Sept. 3, 1814	
.....	Brig.....	10	Com. E. W. Carpenter.....	Lost.....	Tuspan bar.....	1846	Court of inquiry, May 12, 1815; no blame imputed. Court martial, February, 1847; Commander Carpenter sentenced to be dismissed the service, but recommended to clemency and the sentence mitigated to suspension for twelve months.
Vengeance.....	Bomb brig.....	3	.....	Broken up.....	New York.....	1818	
Vesuvius.....	Bomb brig.....	11	.....	Broken up.....	New York.....	1839	
Viper.....	Brig.....	12	Lieut. J. D. Henley.....	Captured.....	At sea.....	Jan. 17, 1813	
Vixen.....	Brig.....	12	Lieut. G. W. Reed.....	Captured.....	At sea.....	Nov. 22, 1813	

STATEMENT—Continued.

Name of vessel.	Rate.	Guns	Commanded by—	Captured, lost, or destroyed.	Where it occurred.	Time.	Remarks.
Vixen.....	Brig.....	14	Capt. Thomas Hall.....	Captured.....	At sea.....	1813.....	Court of inquiry, Dec. 26, 1819; no blame imputed. Court martial, January 27, 1851; Commander Marston tried for improper navigation, &c., and honorably acquitted.
Washington.....	Ship.....	74	.....	Broken up.....	New York.....	1843.....
Wasp.....	Schooner.....	18	Master Com. J. Jones.....	Captured.....	At sea.....	1819.....	
Wasp.....	Ship.....	18	Master Com. J. Blakely.....	Lost.....	At sea.....	1814.....	
Wild Cat.....	Schooner.....	3	Lieut. B. Kennon.....	Lost.....	West Indies.....	1834.....	
Yorktown.....	Sloop.....	16	Com. John Marston.....	Lost.....	Island of Mayo.....	Sept. 1850.....	

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

COMMUNICATING

A Digest of the Statistics of Manufactures according to the returns of the Seventh Census.

JANUARY 21, 1859.—Read, and ordered to lie on the table.

JANUARY 28, 1859.—Motion to print the usual number referred to the Committee on Printing.

MARCH 2, 1859.—Report in favor of printing the tabular statements only submitted, considered, and agreed to.

To the Senate of the United States:

I herewith transmit to the Senate a Digest of the Statistics of Manufactures according to the returns of the Seventh Census, prepared under the direction of the Secretary of the Interior, in accordance with a provision in the first section of an act of Congress approved June 12, 1858, entitled "An act making appropriations for sundry civil expenses of the government for the year ending the thirtieth of June, eighteen hundred and fifty-nine."

JAMES BUCHANAN.

WASHINGTON, January 21, 1859.

DEPARTMENT OF THE INTERIOR,
January 21, 1859.

SIR: I have the honor to communicate for transmission to Congress the Digest of the Statistics of Manufactures, prepared in this department under my direction, in accordance with a proviso in the first section of the act of Congress approved June 12, 1858, entitled "An act making appropriations for sundry civil expenses of the government for the year ending the thirtieth of June, eighteen hundred and fifty-nine."

This work is of so great magnitude that only one copy of it has been prepared, and this, I respectfully suggest, should be sent to the Senate.

I have the honor to be, with great respect, your obedient servant,
J. THOMPSON, *Secretary*.

The PRESIDENT.

MANUFACTURES IN THE SEVERAL STATES AND TERRITORIES
FOR THE YEAR ENDING JUNE 1, 1850.

ABSTRACT

OF THE

STATISTICS OF MANUFACTURES,

ACCORDING TO THE

RETURNS OF THE SEVENTH CENSUS,

CONDENSED FROM

THE DIGEST COMPLETED UNDER THE DIRECTION OF THE SECRETARY
OF THE INTERIOR, IN CONFORMITY WITH THE FIRST
SECTION OF THE ACT OF JUNE 12, 1858,

BY

JOS. C. G. KENNEDY, SUPERINTENDENT.

No. 1.

PRINCIPAL MANUFACTURES.

States and Territories.	Number of establishments.	AGRICULTURAL IMPLEMENTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	2	\$8,000	\$12,000	23	.....	\$5,544	\$34,500
Arkansas	4	10,900	3,460	13	1	4,380	11,900
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	35	233,400	100,140	206	1	86,340	268,047
Delaware	4	9,000	5,662	20	.....	6,504	15,175
District of Columbia...	2	4,500	1,800	3	.....	260	6,550
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	26	112,635	65,523	201	4	57,964	228,837
Illinois	84	254,515	200,630	646	.....	216,060	761,970
Indiana.....	58	66,950	38,896	210	.....	52,776	146,025
Iowa.....	5	4,810	6,338	15	.....	4,044	17,900
Kentucky.....	45	88,200	48,352	217	.....	61,200	184,615
Louisiana	11	14,685	3,918	29	.....	9,240	25,610
Maine.....	49	227,300	110,356	325	..	96,436	250,787
Maryland.....	76	100,150	103,572	322	1	80,222	257,656
Massachusetts	56	542,100	320,200	786	.....	289,384	820,141
Michigan.....	13	13,450	8,696	35	.....	11,940	39,600
Mississippi.....	37	67,770	22,328	112	1	25,608	108,260
Missouri.....	8	15,650	8,932	39	.....	10,032	37,550
New Hampshire.....	28	77,500	43,379	147	.....	45,900	119,026
New Jersey.....	24	32,730	27,312	80	.....	22,944	72,626
New York.....	135	448,500	506,448	223	.....	311,424	1,268,276
North Carolina.....	15	14,019	10,285	52	.....	11,256	32,930
Ohio.....	161	287,526	166,318	765	.....	216,048	557,222
Pennsylvania.....	222	457,224	334,152	947	.....	270,876	853,513
Rhode Island	3	25,000	30,202	70	.....	24,180	72,000
South Carolina.....	13	2,815	5,717	53	.....	10,808	22,222
Tennessee	23	46,622	25,240	143	.....	37,884	97,570
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	25	92,550	51,812	178	.....	43,752	122,355
Virginia.....	26	130,077	66,586	374	.....	72,826	212,206
Wisconsin	31	91,075	51,278	177	1	63,326	187,326
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1,333	3,564,202	2,445,765	7,211	9	2,167,668	6,842,611

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	ARTIFICIAL FLOWERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....	1	\$500	\$2,000		6	\$1,500	\$4,000
Massachusetts.....							
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....							
New York.....	11	28,800	30,000	12	330	32,052	105,000
North Carolina.....							
Ohio.....	2	1,800	1,730	4	97	5,400	8,200
Pennsylvania.....	9	13,000	10,065	46	19	6,840	24,720
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	23	44,100	52,785	62	372	45,792	148,720

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	ASHES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois	2	\$1,500	\$1,325	5		\$1,164	\$4,440
Indiana	26	24,050	25,946	54	1	11,532	58,845
Iowa							
Kentucky							
Louisiana							
Maine	13	5,275	6,475	16		4,068	10,210
Maryland							
Massachusetts							
Michigan	76	60,270	62,070	125		32,940	141,674
Mississippi							
Missouri							
New Hampshire	3	950	1,300	3		468	2,943
New Jersey							
New York	220	217,750	448,737	399	2	96,000	623,871
North Carolina							
Ohio	177	122,715	214,396	311		76,956	403,005
Pennsylvania	31	12,925	25,098	43		10,512	42,629
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont	11	6,575	8,423	15		2,660	15,626
Virginia							
Wisconsin	8	13,650	13,128	19	1	6,372	22,020
Minnesota							
New Mexico							
Oregon							
Utah							
Total	569	485,760	812,120	1,020	4	243,672	1,401,533

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BAGGING, ROPE, AND CORDAGE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	2	\$22,000	\$22,000	48	14	\$6,274	\$44,520
Arkansas							
California							
Connecticut	25	146,250	156,798	136	85	44,124	\$11,266
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	3	2,100	2,860	10		2,832	2,500
Indiana	6	31,500	63,616	60	30	22,416	106,220
Iowa	1	800	600	3		422	1,000
Kentucky	159	1,122,746	1,576,064	2,205	238	353,256	2,211,120
Louisiana	1	3,000	6,400	6	1	3,024	12,640
Maine	4	35,000	52,550	50		11,460	7,222
Maryland	7	28,500	71,430	85		31,008	106,600
Massachusetts	35	668,240	1,152,183	568	92	173,112	1,626,565
Michigan	1	3,000	3,912	6		2,160	1,865
Mississippi							
Missouri	23	134,900	264,460	353		21,022	62,730
New Hampshire	2	16,500	15,320	13		3,260	21,625
New Jersey	8	125,050	263,650	82	15	22,760	226,720
New York	50	528,640	1,454,075	676	234	267,604	2,014,620
North Carolina							
Ohio	17	100,475	158,772	165	53	39,816	262,660
Pennsylvania	41	254,450	285,327	347	9	83,952	621,620
Rhode Island	4	27,000	16,748	30		6,960	24,700
South Carolina							
Tennessee	16	41,175	39,525	143	28	19,608	75,27
Texas							
Vermont	1	200	400	1		240	200
Virginia	9	38,620	40,307	68		14,148	64,710
Wisconsin	2	700	1,250	3		640	1,200
Minnesota							
New Mexico							
Oregon							
Utah							
Total	417	3,341,606	5,612,247	5,258	799	1,122,798	8,022,520

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BAKERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	12	\$23,150	\$41,670	37	.....	\$11,556	\$63,050
Arkansas.....	1	300	1,000	2	.....	578	2,500
California	13	21,600	82,216	43	.....	94,600	293,909
Connecticut	25	46,850	153,364	94	6	33,684	224,253
Delaware.....	13	7,850	28,514	33	.....	10,560	62,685
District of Columbia..	19	38,000	97,170	78	5	19,464	152,255
Florida.....	3	730	5,425	2	4	864	6,900
Georgia	5	2,100	26,900	18	1	4,256	43,000
Illinois.....	31	24,590	70,391	85	.....	21,216	138,462
Indiana	43	27,405	67,683	92	..	24,912	122,478
Iowa.....	5	4,710	2,485	9	.....	2,052	5,790
Kentucky	32	28,275	83,232	87	6	21,384	148,807
Louisiana	35	214,300	396,655	277	3	88,692	608,635
Maine.....	25	50,150	99,687	111	1	31,368	159,735
Maryland.....	193	248,187	658,100	581	23	132,156	1,145,902
Massachusetts	174	489,000	1,204,049	857	40	290,772	1,842,187
Michigan.....	11	12,875	37,240	31	.....	7,572	57,730
Mississippi	4	2,700	3,655	6	.....	1,020	6,670
Missouri.....	68	72,360	202,401	139	2	41,464	339,270
New Hampshire	18	43,100	98,204	89	1	26,252	146,481
New Jersey	26	135,789	435,553	289	19	84,180	662,201
New York.....	436	766,925	2,345,760	1,622	126	422,492	3,903,006
North Carolina.....	3	1,550	1,677	4	.....	1,080	3,570
Ohio	137	123,134	488,974	436	18	118,920	763,511
Pennsylvania	484	737,662	1,536,628	1,164	48	320,700	1,486,976
Rhode Island	21	41,900	91,878	98	1	25,452	151,003
South Carolina.....	21	72,100	131,665	95	70	19,596	189,220
Tennessee.....	6	2,725	1,740	14	.....	3,000	17,810
Texas	12	16,200	16,608	20	.....	6,060	35,034
Vermont	6	19,200	22,753	34	.....	7,992	48,834
Virginia	57	101,300	276,060	207	3	54,468	402,972
Wisconsin	16	15,300	31,171	46	.....	10,226	57,222
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total.....	2,027	3,300,824	8,367,370	6,635	376	1,960,416	13,224,229

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BASKETS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	1	\$100	\$60	2		\$288	\$510
Delaware.....	2	1,500	1,130	5		1,440	3,500
District of Columbia..							
Florida.....							
Georgia.....							
Illinois.....	2	150	300	3		260	2,400
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....	7	2,450	2,493	22		6,732	11,024
Massachusetts.....	16	13,425	10,131	54		17,204	32,223
Michigan.....							
Mississippi.....							
Missouri.....	3	1,200	1,300	10		2,632	5,300
New Hampshire.....	3	1,100	510	5	2	1,644	2,000
New Jersey.....	2	4,100	2,060	12	5	3,204	7,025
New York.....	8	2,350	2,033	22	2	7,080	27,612
North Carolina.....							
Ohio.....	4	2,250	4,580	13		3,756	10,750
Pennsylvania.....	17	7,050	7,913	35	1	8,626	32,826
Rhode Island.....	1	500	600	2		720	2,000
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	1	2,800	300	5	3	1,044	1,000
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	67	38,975	40,410	190	13	56,032	147,400

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BLACKSMITHS					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	40	\$15,705	\$14,799	98	.....	\$18,564	\$33,380
Arkansas	173	196,635	55,345	439	.....	106,056	908,400
California	40	35,990	347,750	157	.....	33,600	1,147,900
Connecticut	910	138,330	122,581	508	.....	167,920	392,518
Delaware	52	96,305	23,057	118	.....	29,064	66,041
District of Columbia ..	27	14,335	15,175	67	.....	21,048	48,923
Florida	5	7,400	1,947	15	.....	3,540	9,255
Georgia	201	169,999	60,631	514	.....	117,516	248,256
Illinois	387	173,851	181,809	807	1	207,180	537,368
Indiana ..	430	163,198	164,333	968	.....	229,788	545,947
Iowa	43	14,480	21,780	98	.....	26,172	73,250
Kentucky ...	440	271,371	186,635	1,187	12	246,994	612,187
Louisiana	46	55,620	37,969	150	.....	71,232	143,540
Maine	254	121,940	138,629	537	.....	171,372	374,671
Maryland	232	87,730	100,480	607	.....	134,832	323,678
Massachusetts	436	369,310	311,950	1,148	.....	398,892	948,626
Michigan	129	68,515	61,167	327	.....	90,504	211,349
Mississippi	164	123,394	56,481	388	.....	94,896	208,472
Missouri	285	153,195	175,323	784	5	191,820	425,052
New Hampshire	219	139,310	95,839	499	.....	128,508	288,869
New Jersey	456	272,027	184,506	968	.....	251,784	583,084
New York	2,068	1,260,451	1,078,986	5,042	.....	1,526,800	3,478,672
North Carolina	66	32,178	23,242	192	.....	35,016	75,226
Ohio	894	319,787	310,321	1,994	.....	483,456	1,039,493
Pennsylvania	1,771	863,860	737,136	3,917	1	930,988	2,186,061
Rhode Island	80	52,067	25,891	175	.....	58,944	124,122
South Carolina	168	171,841	33,054	423	.....	72,812	154,460
Tennessee	455	213,057	125,058	1,131	.....	227,256	480,372
Texas	60	34,645	27,652	148	.....	48,348	106,126
Vermont	217	104,005	57,261	372	.....	106,068	236,735
Virginia	420	186,508	155,189	1,090	.....	204,528	443,289
Wisconsin	115	71,350	70,299	255	.....	74,304	205,852
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	10,373	5,884,149	5,111,386	24,983	19	6,508,032	16,048,536

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BLOCKS AND PUMPS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	15	\$35,000	\$38,769	129	9	\$51,098	\$154,610
Delaware							
District of Columbia ..	1	900	250	3		730	1,300
Florida							
Georgia	1	1,500	180	3		900	3,300
Illinois							
Indiana	8	5,975	1,835	17		5,194	11,793
Iowa							
Kentucky	6	10,950	7,069	28		10,296	26,899
Louisiana	3	2,000	2,494	7		2,940	8,199
Maine	26	26,750	17,139	83		29,316	72,323
Maryland	19	13,300	8,999	57		20,448	44,399
Massachusetts	45	59,475	35,401	125		49,752	118,635
Michigan	2	2,700	4,672	6		2,138	11,609
Mississippi							
Missouri	3	15,000	10,900	37		14,904	38,399
New Hampshire							
New Jersey	5	5,800	2,773	12		3,228	8,126
New York	27	93,560	76,463	149		50,256	261,359
North Carolina							
Ohio	11	13,000	11,294	30		2,594	28,645
Pennsylvania	22	38,530	23,137	64		22,680	65,599
Rhode Island	2	6,600	5,400	17		6,480	16,799
South Carolina							
Tennessee							
Texas							
Vermont	1	2,000	2,000	2		864	6,699
Virginia	5	7,450	3,944	16		5,472	16,159
Wisconsin	1	600	770	3		1,440	2,499
Minnesota							
New Mexico							
Oregon							
Utah							
Total	203	239,690	250,068	774	9	287,736	678,621

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BONNETS, STRAW BRAID, ETC.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	5	\$7,400	\$16,430	16	13	\$6,444	\$94,740
Delaware							
Dist. of Columbia							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	1	3,000	8,800	6	50	11,592	14,000
Maryland							
Massachusetts	30	226,750	774,587	188	2,957	478,608	1,365,698
Michigan							
Mississippi							
Missouri							
New Hampshire	4	2,400	2,612	2	16	2,194	6,600
New Jersey	3	14,000	47,633	6	65	14,368	68,700
New York							
North Carolina							
Ohio							
Pennsylvania	94	83,000	82,367	78	365	77,698	204,010
Rhode Island	1	800	745	5	2	2,040	3,500
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	68	336,350	932,674	303	3,468	592,894	1,687,248

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BOOKBINDERS AND BLANK BOOKS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	3	\$13,500	\$11,500	9		\$5,400	\$25,30
Arkansas.....							
California.....							
Connecticut	8	38,500	50,700	64	107	38,160	118,20
Delaware.....	1	500	250	2		433	1,000
District of Columbia ..	4	5,700	13,440	30	47	17,686	45,80
Florida							
Georgia.....	3	3,600	3,500	8	2	3,180	5,700
Illinois	4	5,050	3,606	12		3,336	12,000
Indiana.....	4	13,800	11,902	25	14	8,772	25,200
Iowa							
Kentucky	8	62,800	35,960	46	44	26,208	74,000
Louisiana							
Maine.....	2	3,500	3,425	8	8	4,152	6,000
Maryland	9	13,300	15,700	27	17	2,664	22,200
Massachusetts	35	98,150	579,734	206	240	117,372	304,000
Michigan.....	3	3,000	5,285	11	1	4,512	12,000
Mississippi							
Missouri	7	6,000	7,980	18	1	5,664	22,000
New Hampshire	5	13,600	9,600	13	11	6,432	24,200
New Jersey	5	112,600	62,421	64	61	24,240	122,000
New York.....	64	270,500	338,148	567	608	311,808	654,700
North Carolina.....							
Ohio.....	15	41,650	94,275	112	122	55,620	220,000
Pennsylvania.....	54	336,650	305,764	520	368	248,916	726,000
Rhode Island.....	1	6,000	4,000	11	7	1,452	12,000
South Carolina.....	1	1,000	700	2		900	4,000
Tennessee							
Texas							
Vermont	1	10,000	3,500	12	3	3,960	10,000
Virginia	1	500	1,000	2		900	2,200
Wisconsin	2	3,500	6,680	7		2,376	11,200
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total	235	1,063,700	1,560,330	1,778	1,690	901,404	2,255,600

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BOOTS AND SHOES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	51	\$40,385	\$62,191	909	2	\$63,012	\$157,303
Arkansas	13	6,980	6,157	30	3	7,836	18,150
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	432	444,331	936,300	2,937	1,189	885,888	1,861,783
Delaware	71	31,335	56,930	258	5	60,732	157,254
District of Columbia ..	59	32,700	52,900	215	62	73,656	144,597
Florida	4	1,780	1,050	10	.....	2,580	4,180
Georgia	84	112,461	93,512	331	1	82,908	244,260
Illinois	189	101,678	174,098	636	10	193,200	478,925
Indiana	326	138,635	179,375	742	24	200,304	506,035
Iowa	27	16,345	90,366	78	2	23,040	56,553
Kentucky	170	143,225	141,101	627	45	156,768	402,212
Louisiana	127	84,150	96,603	428	131	199,848	406,625
Maine	278	223,590	447,148	1,470	586	444,636	261,556
Maryland	464	297,965	504,210	2,122	634	604,368	1,372,358
Massachusetts	1,363	4,694,875	12,178,698	29,252	22,310	9,125,516	24,102,396
Michigan	156	163,740	194,351	719	61	203,880	527,479
Mississippi	49	47,735	43,645	142	1	43,920	123,924
Missouri	184	121,460	163,958	737	30	242,460	559,238
New Hampshire	247	584,869	1,410,411	2,671	1,190	802,126	2,610,160
New Jersey	509	425,781	626,981	2,865	903	777,552	1,698,877
New York	2,119	2,180,207	2,630,698	10,439	3,357	3,220,872	7,776,428
North Carolina	54	33,059	34,294	199	6	37,368	92,109
Ohio	803	545,484	847,754	3,539	287	258,644	2,320,696
Pennsylvania	2,126	1,891,559	2,053,898	8,965	1,820	2,456,964	5,636,772
Rhode Island	39	22,375	23,266	22	17	31,306	66,698
South Carolina	85	61,600	73,025	313	7	60,072	187,180
Tennessee	107	62,120	98,742	384	4	96,060	242,876
Texas	6	2,400	5,405	19	.....	6,120	17,500
Vermont	186	114,710	130,768	533	39	146,222	342,253
Virginia	258	209,927	250,662	1,034	110	233,508	596,883
Wisconsin	76	71,100	109,697	376	13	111,168	286,998
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	11,305	12,294,919	23,848,374	72,205	32,240	21,622,608	53,967,406

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BOXES, BARD AND FANCY.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois	1	\$200	\$225	2		\$253	\$1,000
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	3	2,900	1,450	8	9	2,268	2,000
Maryland	2	500	1,547	2	11	3,120	2,200
Massachusetts	11	7,750	27,940	23	62	17,424	54,000
Michigan							
Mississippi							
Missouri	3	1,040	650	3		840	1,900
New Hampshire	3	2,600	850	5		1,404	2,600
New Jersey ..	1	1,000	1,900	5		1,440	2,600
New York ..	36	75,500	114,033	188	236	83,700	250,200
North Carolina							
Ohio	4	2,050	5,760	14	5	4,404	12,500
Pennsylvania	16	42,700	34,141	53	99	24,912	62,700
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin ..							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	62	136,940	187,796	303	415	136,764	434,100

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BOXES, PACKING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	15	\$16,650	\$15,767	34	1	\$9,108	\$31,773
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana	1	1,000	1,040	5		1,920	4,740
Iowa							
Kentucky	9	500	1,588	8		1,440	4,100
Louisiana							
Maine	7	18,825	16,556	23		7,584	27,500
Maryland							
Massachusetts	73	123,330	151,694	246	12	76,848	304,643
Michigan							
Mississippi							
Missouri	5	5,360	8,550	19		7,152	28,600
New Hampshire	16	12,000	18,251	45		13,390	42,653
New Jersey	18	22,491	48,327	61		17,016	83,781
New York	19	84,275	126,776	183		69,816	266,697
North Carolina							
Ohio	19	25,425	33,154	70		21,190	74,644
Pennsylvania	28	41,300	66,667	140		44,856	144,610
Rhode Island	3	3,000	12,100	44		16,320	39,800
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	206	355,156	500,470	878	13	286,500	1,053,741

No. 1 —PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BRASS FOUNDRIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California.....							
Connecticut	23	\$646,900	\$791,952	430	19	\$161,932	\$1,322,451
Delaware							
District of Columbia.....							
Florida							
Georgia.....							
Illinois	1	1,000	6,000	6		1,800	1,000
Indiana							
Iowa							
Kentucky.....							
Louisiana	5	4,400	4,649	19		5,400	14,400
Maine.....	8	97,700	41,550	32		13,512	61,700
Maryland.....	10	52,340	190,049	76		25,908	27,600
Massachusetts	9	182,700	346,606	178		71,864	421,165
Michigan.....	3	3,050	2,611	8		2,160	5,600
Mississippi.....							
Missouri.....	2	7,500	3,600	10		3,680	14,000
New Hampshire.....	1	4,500	4,450	6		2,400	8,000
New Jersey.....	3	90,150	15,755	36		10,920	31,700
New York.....	38	332,900	364,778	506		197,676	854,600
North Carolina.....							
Ohio	7	32,400	95,160	42		15,006	128,700
Pennsylvania.....	32	948,350	333,802	218		72,132	283,427
Rhode Island.....	4	17,600	1,200	14		5,626	28,675
South Carolina.....							
Tennessee	1	700	1,030	1		380	1,500
Texas							
Vermont.....	1	1,500	400	3		864	2,000
Virginia	1	1,500	4,000	6		960	6,000
Wisconsin							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah							
Total.....	148	1,585,090	2,112,592	1,666	19	501,672	3,065,611

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BREWERIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California	1	\$4,000	\$300	2		\$4,800	\$1,400
Connecticut	1	350	500	1		300	1,800
Delaware							
District of Columbia ..	1	12,000	5,520	5		1,440	5,100
Florida							
Georgia							
Illinois	28	102,900	46,444	85	3	18,936	162,411
Indiana	20	38,200	34,665	47		12,108	68,911
Iowa							
Kentucky	9	40,400	46,696	42		12,300	92,800
Louisiana	1	8,500	7,500	8		3,600	17,000
Maine	1	400	300	2		600	1,500
Maryland	18	62,800	52,872	79		12,884	122,720
Massachusetts	11	180,700	90,300	66		22,560	172,350
Michigan	12	25,000	12,410	34		2,300	45,600
Mississippi							
Missouri	23	204,000	157,960	95	1	26,112	312,395
New Hampshire							
New Jersey	11	167,400	104,216	76		20,604	210,616
New York	26	1,688,300	1,516,550	825	3	222,806	2,568,357
North Carolina							
Ohio	64	349,200	260,638	261	1	66,864	526,286
Pennsylvania	102	1,024,910	612,607	514	3	140,532	1,173,191
Rhode Island	2	17,000	12,041	10		3,000	21,200
South Carolina							
Tennessee							
Texas							
Vermont	1	7,000	1,535	2		600	3,000
Virginia	1	35,000	12,450	14		4,536	30,000
Wisconsin	27	20,820	54,941	25		21,972	152,829
Minnesota							
New Mexico							
Oregon							
Utah	1	3,000	3,500	3		1,200	8,000
Total	431	4,072,380	3,055,266	2,326	11	654,144	5,728,568

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BRICKS.					
		Capital.	Cost of raw material	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	6	\$68,050	\$8,800	199	8	\$25,632	\$60,979
Arkansas.....	1	3,100	90	8	.....	768	29
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	67	38,550	93,303	265	.....	74,736	162,900
Delaware.....	3	56,000	10,900	113	.....	32,760	41,000
District of Columbia...	7	13,300	18,635	166	.....	40,560	34,500
Florida.....	6	84,900	5,000	97	23	19,416	4,700
Georgia.....	13	91,900	14,230	126	31	38,100	116,650
Illinois.....	59	55,750	22,767	309	3	23,936	125,100
Indiana.....	51	33,153	19,517	309	.....	67,634	161,715
Iowa.....	13	4,960	2,340	63	.....	13,716	17,600
Kentucky.....	46	198,185	45,567	620	8	138,072	221,000
Louisiana.....	30	847,694	72,900	535	273	161,436	241,320
Maine.....	72	46,020	94,680	324	.....	83,768	116,016
Maryland.....	61	980,536	194,279	1,381	.....	400,008	471,600
Massachusetts.....	97	146,830	93,690	563	.....	158,376	270,066
Michigan.....	41	27,450	10,362	240	.....	56,544	66,500
Mississippi.....	15	91,626	12,135	258	47	50,640	65,725
Missouri.....	75	106,780	66,907	680	5	178,564	365,510
New Hampshire.....	34	22,700	19,864	150	.....	40,140	55,200
New Jersey.....	30	64,850	25,188	214	.....	58,764	112,900
New York.....	246	693,705	341,095	3,311	.....	862,362	1,425,024
North Carolina.....	12	25,550	725	78	3	8,252	26,500
Ohio.....	155	94,798	71,786	1,080	.....	259,333	516,674
Pennsylvania.....	321	692,610	329,602	3,705	1	1,036,044	1,300,613
Rhode Island.....	2	38,000	9,750	190	.....	36,000	45,000
South Carolina.....	23	307,600	24,485	321	204	44,964	123,000
Tennessee.....	21	109,970	22,857	396	9	47,316	101,000
Texas.....	2	16,900	2,000	21	.....	5,700	2,000
Vermont.....	12	7,270	3,275	71	.....	17,580	1,500
Virginia.....	43	99,760	30,306	524	.....	78,900	165,675
Wisconsin.....	39	41,995	17,919	331	4	72,368	127,765
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1,603	4,367,912	1,474,023	16,796	619	4,235,088	6,610,721

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BRITANNIA AND PLATED WARE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	25	\$127,550	\$201,390	406	80	\$159,960	\$441,060
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	2	7,000	7,400	14		3,096	15,500
Maryland	2	8,600	5,500	16		6,036	15,000
Massachusetts	13	157,400	282,897	278	23	111,912	490,120
Michigan							
Mississippi							
Missouri	1	900	400	2		960	4,000
New Hampshire	1	2,000	2,000	2		960	5,000
New Jersey	8	165,400	143,947	115		30,756	227,785
New York	24	73,550	90,100	206	24	77,732	258,630
North Carolina	1	500	500	2		420	1,900
Ohio	1	500	500	2		960	1,700
Pennsylvania	9	46,700	25,516	69		18,964	71,400
Rhode Island							
South Carolina							
Tennessee	1	400	98	1		600	500
Texas							
Vermont	2	1,500	721	4		1,264	3,300
Virginia	1	150		1		480	600
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	91	562,150	760,978	1,120	156	414,140	1,535,765

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BROOKS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas	1	\$1,500	\$900	2		\$300	\$1,200
California							
Connecticut	4	1,900	3,930	11		3,000	7,000
Delaware	1	225	400	1		240	500
District of Columbia							
Florida							
Georgia							
Illinois	30	2,525	17,845	50	4	12,756	4,000
Indiana	8	1,750	7,005	19		4,632	11,200
Iowa							
Kentucky	2	2,700	3,490	8		1,512	4,200
Louisiana	1		10,000	50		4,800	14,000
Maine	3	750	1,150	5		1,300	1,200
Maryland	7	10,050	14,055	26		7,764	21,000
Massachusetts	76	59,735	165,954	236		60,552	220,000
Michigan	2	400	600	2		516	1,200
Mississippi							
Missouri	4	1,700	1,370	8		1,560	1,200
New Hampshire	4	5,000	5,605	8		2,068	3,000
New Jersey	9	11,850	16,560	22		5,220	25,000
New York	75	170,000	207,872	526	6	110,652	260,100
North Carolina							
Ohio	54	27,685	50,971	145		34,980	112,750
Pennsylvania	27	14,440	16,488	41		11,172	20,200
Rhode Island	1	1,300	3,000	4		360	1,600
South Carolina							
Tennessee	1	200	302	1		240	500
Texas							
Vermont	1	1,000	480	1		240	1,000
Virginia							
Wisconsin	2	375	705	4		676	1,100
Minnesota							
New Mexico							
Oregon							
Utah							
Total	303	314,965	528,842	1,174	10	265,642	948,700

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BRUSHES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama .....	.....	.....	.....	.....	.....	.....	.....
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	1	\$3,000	\$5,000	8	6	\$4,608	\$12,000
Delaware	1	900	375	1	.....	336	700
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....	.....
Illinois	1	50	40	.....	.....	.....	650
Indiana	3	7,800	1,182	103	.....	3,304	3,188
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	2	300	500	4	2	1,140	2,300
Louisiana	1	800	600	4	.....	1,680	3,000
Maine	4	4,700	5,809	12	15	5,062	15,000
Maryland	6	15,600	13,410	45	1	14,928	44,950
Massachusetts	14	155,300	134,017	225	166	98,352	306,675
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	1	4,500	2,300	15	.....	4,140	15,000
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey	8	8,450	11,537	24	1	6,636	26,840
New York	39	338,150	311,272	706	596	275,126	744,180
North Carolina .....	.....	.....	.....	.....	.....	.....	.....
Ohio	11	6,850	12,850	58	17	20,712	40,176
Pennsylvania	52	158,800	132,227	268	24	24,740	325,620
Rhode Island	1	6,000	7,000	5	5	2,220	12,000
South Carolina .....	.....	.....	.....	.....	.....	.....	.....
Tennessee .....	.....	.....	.....	.....	.....	.....	.....
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont .....	.....	.....	.....	.....	.....	.....	.....
Virginia	1	300	170	2	.....	576	1,500
Wisconsin .....	.....	.....	.....	.....	.....	.....	.....
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	146	710,800	638,359	1,500	905	532,460	1,573,579

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	BUTTONS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	39	\$301,500	\$217,482	221	327	\$116,616	\$522,274
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....	1	1,000	2,500	8	2	1,776	2,340
Massachusetts.....	14	157,950	65,161	127	198	64,656	284,225
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....	3	11,000	9,267	19	41	10,512	22,622
New York.....	7	15,250	19,507	73	27	22,668	64,620
North Carolina.....							
Ohio.....	1	500	500	3	3	1,092	2,200
Pennsylvania.....	3	5,300	2,920	13	23	7,060	23,126
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	1	500	500	3		720	2,600
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	59	393,000	324,837	467	621	225,120	264,229

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CABINET WARE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	29	\$36,780	\$91,933	74	1	\$28,560	\$72,595
Arkansas.....	10	5,650	3,555	30	.....	9,312	20,350
California.....	4	5,500	15,166	13	.....	9,600	22,732
Connecticut.....	68	196,350	139,678	414	17	131,736	352,310
Delaware.....	21	24,700	9,725	60	.....	18,060	42,905
District of Columbia..	23	39,500	27,235	77	1	33,912	85,075
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	40	83,560	46,901	206	.....	73,512	162,360
Illinois.....	140	138,791	84,680	550	.....	173,352	357,203
Indiana.....	224	204,819	25,445	729	5	209,772	430,393
Iowa.....	25	15,000	11,940	77	.....	22,218	51,805
Kentucky.....	166	254,523	231,627	824	10	269,533	680,179
Louisiana.....	43	62,750	48,000	136	1	76,900	190,800
Maine.....	73	99,433	48,139	245	6	77,712	164,112
Maryland.....	141	300,722	208,695	841	62	276,372	705,165
Massachusetts.....	335	841,155	1,226,363	2,438	569	912,144	2,635,216
Michigan.....	82	93,350	34,767	326	3	99,106	196,255
Mississippi.....	27	25,630	26,650	65	.....	23,520	62,300
Missouri.....	99	96,105	74,523	326	2	102,624	258,391
New Hampshire.....	63	103,600	62,628	283	5	75,588	191,048
New Jersey.....	134	185,460	114,659	522	7	156,264	324,807
New York.....	820	1,826,869	1,785,004	5,271	245	1,710,180	4,266,082
North Carolina.....	36	31,035	16,842	127	.....	25,244	60,084
Ohio.....	489	850,583	511,702	2,507	15	736,512	1,809,390
Pennsylvania.....	707	1,168,885	684,623	3,255	17	926,224	2,553,720
Rhode Island.....	21	51,000	17,922	79	2	28,308	59,036
South Carolina.....	23	21,750	18,520	78	.....	18,096	55,615
Tennessee.....	110	91,200	49,630	227	.....	79,752	181,253
Texas.....	15	11,300	17,675	49	1	23,426	54,776
Vermont.....	57	78,075	33,114	202	23	55,776	122,960
Virginia.....	136	220,071	164,475	613	18	166,428	454,920
Wisconsin.....	59	66,750	45,050	249	3	77,124	177,377
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	1	400	700	4	.....	960	3,000
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	4,242	7,303,356	6,089,546	20,227	1,013	6,638,568	17,663,054

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CALICO PRINTERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	5	\$900,000	\$103,959	196	150	\$46,900	\$184,800
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....							
Massachusetts.....	5	900,000	2,339,200	675	51	238,740	3,222,500
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....	7	373,800	1,001,635	470	119	148,022	1,525,610
New York.....	4	688,000	1,404,500	350	77	112,320	1,622,675
North Carolina.....							
Ohio.....							
Pennsylvania.....	10	665,000	1,579,954	679	208	191,220	1,825,620
Rhode Island.....	11	1,096,000	4,042,908	1,051	194	352,332	5,242,340
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	42	3,922,800	10,462,044	3,351	729	1,082,904	12,622,825

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CARPENTERS AND BUILDERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	119	\$199,190	\$637,032	950		\$356,290	\$1,239,238
Delaware	2	700	980	7		2,520	14,000
District of Columbia ..	52	45,950	100,635	293		76,090	234,355
Florida							
Georgia	3	31,950	13,875	106		43,500	62,700
Illinois	49	16,530	21,074	109		29,096	75,097
Indiana	86	32,655	47,718	256		78,072	163,737
Iowa	7	730	7,750	12		3,900	16,400
Kentucky	93	115,070	239,607	477	3	172,116	524,034
Louisiana	3	3,700	1,300	8		1,680	4,300
Maine	49	16,675	38,001	81		27,780	72,220
Maryland	232	218,497	518,588	1,237		451,696	1,518,117
Massachusetts	557	690,375	1,297,449	2,671		1,118,508	3,062,463
Michigan	3	1,400	1,375	8		2,508	5,800
Mississippi	16	22,400	27,350	70		28,176	94,700
Missouri	123	233,495	541,745	1,046		486,288	1,591,510
New Hampshire	12	12,500	39,350	106		40,320	100,750
New Jersey	105	177,435	365,063	750		263,700	749,913
New York	438	774,775	1,756,308	3,322		1,947,544	4,056,265
North Carolina	11	90,875	17,745	77	3	19,752	51,150
Ohio	145	87,791	205,830	682		218,196	568,198
Pennsylvania	431	302,715	726,610	1,710		512,712	1,631,652
Rhode Island	22	22,900	65,675	125		47,840	160,800
South Carolina	11	90,875	2,300	59		14,772	26,120
Tennessee	61	83,615	86,365	346		103,164	242,506
Texas	8	2,650	5,220	24		11,208	24,900
Vermont	17	5,225	5,392	32		8,592	17,120
Virginia	110	125,310	202,153	687		183,264	485,994
Wisconsin	94	14,625	31,810	104		39,072	92,050
Minnesota							
New Mexico							
Oregon							
Utah	1	1,700		9		804	10,600
Total	2,790	3,286,308	7,011,930	15,276	6	5,592,220	16,886,819

NO. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CARPETS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$210,000	\$463,997	580	598	\$268,380	\$1,079,222
Delaware.....	1	150	450	1		312	1,400
District of Columbia..							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....	2	12,000	14,030	32	23	12,108	22,500
Maryland.....							
Massachusetts.....	12	1,828,000	1,156,638	1,023	826	386,124	1,761,000
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....	1	21,000	18,375	37	17	15,300	22,000
New Jersey.....	12	63,006	48,520	111	20	27,192	115,630
New York.....	28	802,175	627,037	1,160	545	229,872	1,222,619
North Carolina.....							
Ohio.....	1	1,200	3,700	5		200	6,000
Pennsylvania.....	56	215,450	742,845	932	276	246,312	1,135,733
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	116	3,852,981	3,075,592	3,681	2,303	1,246,560	5,422,634

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CARS, RAILROAD.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.
Alabama.....						
Arkansas.....						
California.....						
Connecticut.....	4	\$227,500	\$280,275	255		\$106,800
Delaware.....						
District of Columbia..						
Florida.....						
Georgia.....	1	50,000	10,850	70		37,800
Illinois.....						
Indiana.....	3	45,000	187,730	113		58,224
Iowa.....						
Kentucky.....						
Louisiana.....						
Maine.....						
Maryland.....	1	600	1,080	6		1,672
Massachusetts.....	7	169,000	485,140	355		170,796
Michigan.....	1	55,000	29,050	95		37,800
Mississippi.....						
Missouri.....						
New Hampshire.....	1	25,000	20,700	35		15,120
New Jersey.....	1	13,140	34,250	30		12,000
New York.....	5	136,000	170,852	269		102,180
North Carolina.....	1	2,000	1,000	4		480
Ohio.....	5	80,475	60,400	143		62,160
Pennsylvania.....	10	85,300	85,622	149		50,076
Rhode Island.....						
South Carolina.....						
Tennessee.....						
Texas.....						
Vermont.....	1	7,000	26,740	30		9,000
Virginia.....						
Wisconsin.....						
Minnesota.....						
New Mexico.....						
Oregon.....						
Utah.....						
Total.....	41	896,015	1,323,676	1,554		664,708
						2,493,556

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CARPERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	4	4,080	5,800	11		4,948	11,300
Delaware.....							
District of Columbia..	1	300	1,320	1		480	3,000
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....	4	1,500	2,980	15		4,694	6,100
Maryland.....	5	650	960	10		3,936	2,300
Massachusetts.....	12	7,350	4,565	59		28,960	40,700
Michigan.....	1	3,000	1,900	5		1,500	5,000
Mississippi.....							
Missouri.....	2	800	340	4		3,120	5,000
New Hampshire.....							
New Jersey.....	1	12,000	3,545	20		12,000	25,000
New York.....	6	10,100	5,847	38		18,648	25,000
North Carolina.....							
Ohio.....							
Pennsylvania.....							
Rhode Island.....	1	300	900	5		1,500	1,800
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	37	40,080	26,057	168		78,516	144,000

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CEMENT, FOR BUILDING PURPOSES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut.....	3	\$8,500	\$2,491	11		\$2,928	\$6,350
Delaware							
District of Columbia.....							
Florida							
Georgia							
Illinois	1	4,000	300	3		380	3,000
Indiana	1	8,000	966	6		1,440	12,500
Iowa							
Kentucky.....	1	8,500	2,300	5		1,620	8,000
Louisiana.....							
Maine							
Maryland.....							
Massachusetts							
Michigan							
Mississippi.....							
Missouri							
New Hampshire							
New Jersey.....	2	130,000	95,750	140		43,900	204,670
New York.....	24	225,625	130,475	234		66,612	266,140
North Carolina.....							
Ohio							
Pennsylvania.....	1	400	725	1		240	1,150
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas							
Vermont							
Virginia.....	2	6,500	5,150	7		1,524	7,300
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah							
Total.....	35	391,525	236,157	407		117,924	509,110

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CHANDLERS.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Value of product.
Alabama.....						
Arkansas.....						
California.....						
Connecticut.....	24	\$64,300	\$85,920	71	6	\$23,284
Delaware.....	2	33,000	37,851	11		3,708
District of Columbia...	2	21,000	11,815	11		2,532
Florida.....						
Georgia.....	3	2,000	3,368	6		2,520
Illinois.....	14	67,850	117,084	66		19,900
Indiana.....	10	13,500	21,234	26		7,326
Iowa.....						
Kentucky.....	10	98,500	185,855	50		15,456
Louisiana.....	11	97,300	109,690	73	4	19,188
Maine.....	12	19,550	29,795	39		9,324
Maryland.....	12	224,600	427,220	183	19	47,316
Massachusetts.....	64	526,950	870,059	322	2	106,492
Michigan.....	12	37,300	57,405	55		12,672
Mississippi.....						
Missouri.....	13	181,000	344,078	131	31	36,876
New Hampshire.....	7	12,400	19,583	16		5,944
New Jersey.....	16	270,900	307,336	94	3	22,848
New York.....	105	1,156,150	2,262,684	661	59	203,514
North Carolina.....	1	1,100	1,500	2		480
Ohio.....	40	442,480	384,898	222	8	62,972
Pennsylvania.....	62	708,070	1,106,636	334	14	26,520
Rhode Island.....	9	102,750	455,003	63	9	22,724
South Carolina.....	1	6,000	10,000	5		600
Tennessee.....	5	18,700	27,447	27	1	6,168
Texas.....						
Vermont.....						
Virginia.....	19	25,900	106,114	91		20,798
Wisconsin.....	11	14,200	84,124	31		9,240
Minnesota.....						
New Mexico.....						
Oregon.....						
Utah.....						
Total.....	487	4,145,400	7,006,767	2,660	156	775,300

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CHARCOAL.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	6		\$1,610	13		\$3,480	\$3,480
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	19	\$2,650	3,510	91		3,190	10,785
Indiana	1	125	75	1		319	500
Iowa							
Kentucky	1	30	360	1		240	625
Louisiana							
Maine							
Maryland	1	1,000	570	4		960	2,170
Massachusetts	13	51,075	14,190	45		11,554	31,063
Michigan							
Mississippi							
Missouri							
New Hampshire	4	2,900	5,173	12		2,916	10,205
New Jersey	56	150,325	69,985	349		73,894	167,065
New York	19	22,240	23,800	207		55,894	81,018
North Carolina							
Ohio							
Pennsylvania	16	22,300	32,560	94		12,594	62,260
Rhode Island	10	4,180	2,505	18		5,676	16,170
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin	1	400	300	2		360	790
Minnesota							
New Mexico							
Oregon							
Utah							
Total	140	\$76,225	161,606	767		176,770	366,651

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CHEMICALS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	4	\$4,700	\$7,225	5		\$2,008	\$61.23
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....	1	1,500	6,100	2		576	7.50
Indiana.....	1	2,000	1,500	5		1,500	4.00
Iowa.....							
Kentucky.....							
Louisiana.....	2	1,500	7,570	4	1	1,704	14.50
Maine.....	1	500	3,000	3	7	1,908	7.00
Maryland.....	8	211,550	113,083	193		36,984	65.00
Massachusetts.....	24	504,200	741,083	242	8	82,640	1,012.13
Michigan.....							
Mississippi.....							
Missouri.....	7	22,450	12,770	14		4,200	25.20
New Hampshire.....							
New Jersey.....	18	156,915	242,679	22		32,340	25.00
New York.....	38	337,800	1,073,213	261	16	75,456	1,404.00
North Carolina.....							
Ohio.....	23	169,400	263,277	130		44,672	412.73
Pennsylvania.....	36	848,400	734,610	437	22	126,100	1,121.76
Rhode Island.....	3	27,000	11,300	16		4,620	22.20
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	1	45,000	4,200	15		3,000	16.10
Virginia.....	2	2,100	1,300	4		912	3.10
Wisconsin.....	1	600	3,060	2		600	5.00
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	170	2,335,715	3,235,360	1,335	54	422,000	4,575.53

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CLOTHIERS AND TAILORS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	19	\$59,700	\$48,800	72	21	\$38,060	\$107,060
Arkansas	1	100	100	2	.....	480	600
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	155	361,515	900,885	498	3,766	473,556	1,519,433
Delaware	16	33,400	45,405	39	111	24,994	83,608
District of Columbia ..	45	82,250	163,031	180	244	97,856	297,900
Florida	1	300	400	4	.....	960	1,600
Georgia	19	11,850	29,000	43	25	23,004	75,500
Illinois	61	162,550	201,276	351	249	122,432	441,697
Indiana	74	100,585	153,951	238	396	116,652	327,699
Iowa	5	2,150	6,000	7	2	2,088	8,500
Kentucky	131	353,530	563,324	787	781	385,438	1,056,877
Louisiana	75	114,300	128,675	163	194	125,136	339,830
Maine	93	173,650	555,075	232	1,469	232,344	917,311
Maryland	267	622,340	1,339,781	1,641	3,689	865,876	2,624,377
Massachusetts	333	1,758,155	4,763,470	3,626	10,702	2,790,480	8,757,156
Michigan	33	71,710	97,628	191	178	78,624	212,300
Mississippi	9	12,980	14,570	23	5	11,700	32,550
Missouri	147	198,310	302,463	659	303	256,536	750,791
New Hampshire	85	134,100	358,149	185	721	174,624	616,323
New Jersey	137	646,910	1,568,787	1,360	3,545	672,104	2,484,594
New York	976	4,011,622	8,603,368	16,148	24,623	5,067,036	16,007,534
North Carolina	22	24,220	37,551	79	15	25,198	76,144
Ohio	316	523,134	1,422,054	2,100	2,401	785,100	2,755,222
Pennsylvania	930	2,544,656	3,572,296	5,122	6,173	2,104,236	6,268,498
Rhode Island	22	72,750	169,222	255	577	166,244	422,372
South Carolina	23	25,460	94,600	68	14	16,896	60,075
Tennessee	76	62,742	115,033	227	29	72,776	241,356
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont	33	47,365	50,515	68	247	55,546	124,560
Virginia	136	166,227	303,078	519	590	209,856	615,657
Wisconsin	41	65,060	137,319	256	132	76,104	272,321
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico	2	2,800	2,500	5	.....	2,652	10,000
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	4,378	12,509,161	25,730,258	35,051	61,500	15,032,340	48,311,709

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COACHES AND CARRIAGES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	12	\$55,900	\$37,000	118	.....	\$53,804	\$11,300
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	108	511,575	619,509	1,304	15	465,444	1,278,035
Delaware.....	15	43,100	36,675	162	.....	43,056	111,320
District of Columbia...	9	66,500	28,305	90	1	30,360	20,400
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	73	137,080	96,391	494	.....	131,040	200,000
Illinois.....	18	97,650	21,649	100	.....	30,268	71,000
Indiana.....	61	55,955	40,886	222	.....	63,708	16,700
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	32	102,900	66,062	222	1	90,960	220,000
Louisiana.....	13	68,350	12,400	71	.....	35,400	75,000
Maine.....	80	81,300	57,290	331	.....	93,868	123,604
Maryland.....	52	127,450	113,415	422	1	130,260	27,000
Massachusetts.....	134	206,425	222,511	902	6	206,724	720,220
Michigan.....	.....	.....	.....	.....	.....	.....	.....
Mississippi.....	20	24,125	18,305	86	.....	32,040	6,900
Missouri.....	137	150,041	122,949	564	1	184,284	424,641
New Hampshire.....	33	122,775	76,133	266	.....	88,116	212,000
New Jersey.....	133	547,520	504,169	1,419	5	412,140	1,273,400
New York.....	125	740,850	813,471	1,935	18	614,484	1,512,200
North Carolina.....	78	135,538	101,580	569	2	137,256	312,100
Ohio.....	123	370,498	220,791	1,223	1	337,800	210,200
Pennsylvania.....	211	632,391	512,145	1,970	3	538,976	1,460,000
Rhode Island.....	16	27,250	16,290	68	.....	24,684	57,500
South Carolina.....	43	165,575	72,155	324	.....	85,572	220,000
Tennessee.....	26	122,150	87,917	242	.....	81,000	210,000
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	8	15,700	5,919	47	.....	12,664	25,000
Virginia.....	79	277,439	195,671	774	4	198,400	400,000
Wisconsin.....	10	26,700	17,708	85	.....	28,116	64,200
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1,622	4,973,707	3,255,959	13,022	56	4,262,804	11,672,630

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COAL MINING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	8	\$6,835	\$1,529	53	2	\$6,986	\$12,747
Arkansas	1	130		2		360	500
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois	8	115,300		76		36,964	71,135
Indiana	1	800	1,000	40		12,000	21,000
Iowa	1	2,000		4		1,900	4,000
Kentucky	45	147,000	3,031	453		89,530	163,863
Louisiana ..							
Maine							
Maryland	3	605,000		210		65,400	196,000
Massachusetts							
Michigan							
Mississippi							
Missouri	34	22,660	250	250		82,764	226,116
New Hampshire							
New Jersey							
New York							
North Carolina							
Ohio	194	337,175	450	1,187		351,972	790,196
Pennsylvania	246	5,313,731	225,279	11,753		3,221,772	5,268,351
Rhode Island ..	1	30,000	2,500	40		2,600	22,500
South Carolina							
Tennessee ..							
Texas							
Vermont							
Virginia	36	1,739,650	12,375	1,044	4	194,668	467,406
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	510	8,317,501	246,414	15,112	6	4,068,188	7,173,750

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COFFEE AND SPICE.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	2	\$7,160	\$26,600	5		\$1,488	\$21,920
Delaware.....	1	40,000	17,830	3	3	1,930	31,600
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	3	12,500	9,900	17	1	5,460	12,100
Louisiana.....	5	5,650	16,650	17	1	8,100	28,900
Maine.....							
Maryland.....	3	12,100	21,625	12	2	3,516	31,300
Massachusetts.....	4	28,800	155,560	24		11,400	217,000
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....							
New York.....	14	253,000	477,210	153	3	43,922	601,200
North Carolina.....							
Ohio.....							
Pennsylvania.....	15	79,275	110,704	72	2	23,328	172,254
Rhode Island.....	1	237	7,175	2		576	10,250
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	48	438,662	842,254	305	12	92,900	1,246,674

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COMBS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	.....	.....	.....	.....	.....	.....	.....
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	27	\$290,750	\$436,405	313	136	\$194,968	\$636,800
Delaware.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia.....	.....	.....	.....	.....	.....	.....	.....
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....	.....	.....	.....
Illinois.....	.....	.....	.....	.....	.....	.....	.....
Indiana.....	.....	.....	.....	.....	.....	.....	.....
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....	.....	.....	.....
Louisiana.....	.....	.....	.....	.....	.....	.....	.....
Maine.....	5	4,900	6,300	21	7	6,694	14,500
Maryland.....	4	1,400	2,619	11	.....	2,904	7,100
Massachusetts.....	63	214,262	277,762	621	167	231,408	622,801
Michigan.....	.....	.....	.....	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	1	200	150	1	.....	300	1,000
New Hampshire.....	1	5,000	600	5	1	1,294	2,500
New Jersey.....	1	7,500	5,600	15	.....	5,040	18,000
New York.....	18	31,650	37,627	212	22	45,652	112,000
North Carolina.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	3	3,400	2,470	22	2	6,000	13,500
Pennsylvania.....	22	51,750	62,100	152	9	55,140	153,214
Rhode Island.....	1	20,000	10,500	40	15	12,000	28,000
South Carolina.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....	.....	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	4	2,575	225	10	.....	2,576	6,050
Virginia.....	1	250	24	3	1	300	585
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	151	632,637	843,422	1,426	302	494,196	1,615,860

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CONFECTIONERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	5	\$38,000	\$98,100	21	.....	\$6,000	\$7,800
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	14	27,550	54,320	54	19	20,256	31,800
Delaware.....	1	300	950	1	3	444	1,300
District of Columbia...	13	8,975	22,635	25	.....	7,584	6,700
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	5	8,367	14,260	18	1	4,680	28,000
Illinois.....	8	6,000	22,416	22	1	7,920	6,700
Indiana.....	5	7,500	13,985	14	.....	3,576	24,100
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	23	49,700	100,637	107	15	27,694	128,674
Louisiana.....	19	68,250	67,675	76	.....	25,680	128,200
Maine.....	11	23,800	40,978	39	18	15,348	78,700
Maryland.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	31	71,600	163,960	129	75	54,972	251,707
Michigan.....	3	15,225	8,575	9	2	2,304	15,000
Mississippi.....	2	4,000	3,250	5	.....	1,680	5,000
Missouri.....	14	10,300	27,794	34	5	10,320	58,600
New Hampshire.....	7	7,000	17,216	15	6	6,348	22,500
New Jersey.....	9	14,300	20,486	23	6	6,984	41,550
New York.....	68	264,350	518,969	310	113	111,228	224,412
North Carolina.....	1	3,000	2,000	4	.....	720	3,000
Ohio.....	33	76,134	114,670	116	13	30,960	215,000
Pennsylvania.....	104	264,700	339,739	265	66	91,260	612,000
Rhode Island.....	2	6,000	23,075	19	3	7,032	26,000
South Carolina.....	3	2,100	2,000	6	.....	1,260	4,000
Tennessee.....	3	42,000	27,128	33	.....	9,300	36,000
Texas.....	1	500	175	1	.....	480	1,000
Vermont.....	2	4,000	18,780	15	.....	3,940	20,000
Virginia.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	3	2,000	10,750	13	.....	2,304	16,000
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	383	1,026,551	1,691,824	1,366	245	456,904	2,008,671

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COOPERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$2,000	\$1,600	9	.....	\$3,780	\$6,600
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	1	3,000	4,000	6	.....	3,600	10,600
Connecticut.....	39	84,925	83,478	163	.....	51,996	157,989
Delaware.....	16	60,700	38,709	170	.....	45,192	97,296
District of Columbia...	5	8,660	6,585	32	.....	10,500	19,750
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	4	3,675	6,150	96	.....	6,980	15,000
Illinois.....	241	126,989	109,064	579	.....	263,940	435,463
Indiana.....	279	172,192	143,376	1,032	.....	256,896	462,196
Iowa.....	26	27,650	17,251	161	3	46,164	60,186
Kentucky.....	51	27,065	21,490	170	.....	42,372	66,542
Louisiana.....	33	60,400	36,940	198	3	70,140	148,807
Maine.....	22	57,690	62,769	269	.....	79,362	145,785
Maryland....	26	47,730	111,761	487	.....	108,912	264,758
Massachusetts.....	22	216,320	264,449	530	.....	187,236	558,962
Michigan.....	77	42,950	37,626	220	.....	65,448	124,045
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	103	71,465	156,737	557	.....	160,884	374,000
New Hampshire.....	43	36,940	24,297	106	.....	26,486	62,051
New Jersey.....	40	18,515	17,146	113	.....	26,808	50,750
New York.....	684	618,822	808,268	2,926	.....	792,492	1,920,267
North Carolina....	14	20,306	29,277	90	.....	18,648	66,452
Ohio.....	470	224,552	215,522	2,023	.....	516,360	1,052,512
Pennsylvania.....	246	179,655	164,532	804	2	207,348	461,557
Rhode Island.....	7	10,537	6,502	20	.....	5,904	12,137
South Carolina.....	7	9,250	1,210	38	.....	5,940	12,670
Tennessee.....	20	17,060	8,425	81	.....	15,540	30,095
Texas.....	4	900	2,510	10	.....	2,880	8,200
Vermont.....	15	11,880	9,456	39	.....	8,556	26,412
Virginia.....	122	97,696	140,574	887	8	121,140	302,262
Wisconsin.....	37	25,420	23,248	163	.....	45,888	82,577
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	2,202	2,362,040	2,644,589	11,920	16	3,221,204	7,122,31

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COPPER AND BRASS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	11	\$597,400	\$667,681	330	2	\$63,732	\$1,033,000
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	2	5,000	6,495	15		4,880	14,000
Indiana	2	1,200	1,800	4		1,248	2,200
Iowa							
Kentucky	7	26,850	47,000	30		13,572	24,510
Louisiana	5	5,000	11,000	16		12,408	22,500
Maine	1	150	45	1		300	70
Maryland	13	171,000	421,683	117		43,140	613,675
Massachusetts	33	413,650	653,552	300		112,308	95,800
Michigan	23	612,760		720		226,640	265,000
Mississippi	1	150	210	1		180	1,000
Missouri	3	5,000	10,302	8		1,404	17,000
New Hampshire	1	1,500	3,000	6		2,680	4,000
New Jersey	8	200,000	378,608	165		22,712	422,700
New York	20	153,800	236,120	203		51,672	425,000
North Carolina	4	12,300	12,600	26		7,696	24,200
Ohio	5	22,550	45,765	24		8,312	22,675
Pennsylvania	19	645,150	321,025	406		155,784	622,200
Rhode Island	2	15,500	10,650	18		6,240	27,000
South Carolina	1	1,200	1,000	1		300	2,000
Tennessee	1	500	536	2		720	1,000
Texas							
Vermont							
Virginia	9	2,221	16,335	28		8,316	32,725
Wisconsin	4	5,650	9,225	9		3,000	17,100
Minnesota							
New Mexico							
Oregon							
Utah							
Total	175	2,650,561	2,022,061	2,326	2	556,044	4,942,200

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COTTONS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	13	\$681,900	\$370,671	349	307	\$59,590	\$398,585
Arkansas.....	3	16,500	9,975	14	18	3,840	17,360
California.....							
Connecticut.....	106	4,012,600	2,342,084	2,665	3,313	1,077,024	4,122,952
Delaware.....	12	585,100	314,768	413	485	134,304	538,430
District of Columbia..	1	85,000	67,000	41	103	16,800	100,000
Florida.....	1	80,000	30,000	26	67	9,540	49,980
Georgia.....	22	1,308,256	832,804	816	1,221	225,180	1,325,056
Illinois.....							
Indiana.....	5	74,500	55,220	66	79	17,964	86,660
Iowa.....							
Kentucky.....	10	545,000	275,407	210	316	73,572	445,639
Louisiana.....							
Maine.....	13	3,347,700	1,600,430	849	3,072	751,536	2,630,616
Maryland.....	33	2,348,600	1,353,361	1,212	2,035	435,768	2,021,396
Massachusetts.....	222	27,846,720	12,446,849	9,582	20,264	6,042,024	21,394,401
Michigan.....							
Mississippi.....	1	35,000	15,000	16	14	3,804	22,000
Missouri.....	2	102,000	86,446	75	80	19,440	122,900
New Hampshire.....	43	10,274,700	4,888,304	2,215	2,235	2,343,360	8,861,749
New Jersey.....	22	1,691,000	741,086	739	1,229	308,194	1,269,648
New York.....	118	5,554,320	2,888,465	3,379	5,489	1,443,780	5,019,323
North Carolina.....	35	1,327,400	690,118	492	1,372	162,272	985,411
Ohio.....	9	537,500	259,613	268	434	104,808	594,204
Pennsylvania.....	136	4,671,015	2,356,108	4,283	4,374	1,375,344	5,812,126
Rhode Island.....	159	6,572,125	3,515,769	4,847	5,901	2,031,036	6,425,973
South Carolina.....	19	202,600	401,221	436	676	155,472	822,440
Tennessee.....	22	647,272	291,080	316	522	97,536	508,481
Texas.....							
Vermont.....	11	127,500	170,604	123	207	55,322	220,300
Virginia.....	25	1,898,200	836,681	1,151	1,578	262,672	1,446,109
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	1,074	76,032,578	37,778,064	35,225	62,661	17,267,112	65,591,687

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COTTONS AND WOOLENS, MIXED.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	12	\$138,330	\$177,357	173	69	\$43,512	\$25,39
Louisiana							
Maine							
Maryland							
Massachusetts							
Michigan							
Mississippi	1	5,500	12,500	6	5	1,900	12,70
Missouri							
New Hampshire							
New Jersey							
New York							
North Carolina							
Ohio							
Pennsylvania	90	1,567,900	2,131,529	2,468	1,627	764,040	3,000,641
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	103	1,711,790	2,321,966	2,607	1,901	806,732	3,025,71

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CUTLERY AND EDGE TOOLS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	27	\$396,300	\$332,511	801	25	\$308,668	\$841,301
Delaware	1	1,000	544	3		864	2,300
District of Columbia..	1	300	80	1		312	1,000
Florida							
Georgia	1	4,000	500	4		1,140	2,000
Illinois							
Indiana	9	8,375	8,067	25		7,812	22,650
Iowa							
Kentucky	5	5,500	11,750	17		6,072	20,300
Louisiana	1	3,000	1,000	3		1,800	5,000
Maine	24	17,980	12,367	55		18,060	37,720
Maryland	9	12,100	10,231	44		13,836	37,296
Massachusetts	79	446,850	303,570	984	3	349,584	934,578
Michigan	2	2,300	2,180	10		4,020	8,750
Mississippi							
Missouri	8	22,550	25,170	41		18,552	61,950
New Hampshire	20	53,100	27,118	108		33,364	82,086
New Jersey	25	84,750	86,939	235		76,876	211,430
New York	67	426,220	270,809	632		284,460	645,878
North Carolina							
Ohio	38	161,415	70,672	304		100,044	217,770
Pennsylvania	66	357,465	272,908	627		186,684	622,127
Rhode Island	2	3,800	1,650	7		2,332	6,200
South Carolina	2	550	225	3		684	1,600
Tennessee							
Texas							
Vermont	7	9,200	10,461	33		10,164	40,920
Virginia	6	3,200	3,680	18		4,808	7,905
Wisconsin	1	400	30	2		600	1,200
Minnesota							
New Mexico							
Oregon							
Utah							
Total	401	2,221,825	1,432,462	4,247	28	1,420,844	3,812,241

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	DAGUERRETYPE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	9	\$6,300	\$6,000	14		\$6,000	\$11,700
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois	1	1,300	400	2		384	1,000
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	2	225	175	2		790	1,000
Maryland	9	13,900	2,350	21		10,008	2,700
Massachusetts	22	22,850	44,134	45	13	30,996	66,160
Michigan							
Mississippi							
Missouri	4	4,300	5,700	4		1,630	14,500
New Hampshire	1	600	1,900	2		200	2,500
New Jersey	3	2,300	5,314	6		2,556	14,300
New York							
North Carolina							
Ohio	7	3,850	7,221	15		6,156	21,700
Pennsylvania	11	20,100	12,905	22	4	8,980	23,500
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont	1	1,300	1,300	2		780	2,500
Virginia	2	2,300	1,100	3		1,060	4,400
Wisconsin	2	3,700	3,000	3		980	7,200
Minnesota							
New Mexico							
Oregon							
Utah							
Total	74	89,925	99,789	141	17	70,500	\$24,500

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	DISTILLERIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$500	\$1,500	2		\$300	\$2,500
Arkansas.....							
California.....							
Connecticut.....	7	19,250	46,425	26		8,976	64,630
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....	8	9,230	12,591	25	2	5,064	19,001
Illinois.....	31	220,000	380,393	188	3	50,052	822,059
Indiana.....	38	306,650	651,869	301	2	82,044	1,137,961
Iowa.....	4	13,500	19,960	16		4,680	37,600
Kentucky.....	73	161,785	257,334	279	3	57,504	471,307
Louisiana.....	2	39,000	19,500	14		5,400	67,500
Maine.....	1	17,000	45,400	5		1,560	60,000
Maryland.....	16	184,300	457,638	52		17,220	566,064
Massachusetts.....	16	404,000	1,121,010	100		42,624	1,326,330
Michigan.....	23	115,425	127,835	86		25,380	230,230
Mississippi.....							
Missouri.....	29	124,850	203,013	125	5	32,808	310,862
New Hampshire.....							
New Jersey.....	57	250,355	258,902	185	4	47,736	394,160
New York.....	93	1,400,822	3,454,322	777	1	265,428	4,670,497
North Carolina.....	47	20,730	26,183	72		9,828	48,431
Ohio.....	122	1,145,524	1,791,107	867	3	241,044	3,040,604
Pennsylvania.....		764,100	1,354,390	500		126,444	1,905,130
Rhode Island.....							
South Carolina.....		3,625	7,850	35		3,900	18,260
Tennessee.....		68,863		175		26,868	179,355
Texas.....							
Vermont.....		110	90	117		24,296	294,909
Virginia.....				41	17	4,968	47,050
Washington.....			700	21		5,040	55,800
West Virginia.....							
Wisconsin.....			543,201	3,985	23	1,089,864	15,770,240

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	DYEES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$1,650	\$1,199	6		\$1,990	\$2,000
Delaware.....							
District of Columbia..	1	300	198	2		600	1,500
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....	2	1,100	1,000	6		2,700	5,500
Maine.....							
Maryland.....	3	5,500	1,300	7	1	3,008	6,800
Massachusetts.....							
Michigan.....							
Mississippi.....							
Missouri.....	1	900	190	3		576	1,800
New Hampshire.....							
New Jersey.....							
New York.....	12	148,000	471,850	103	14	39,480	603,000
North Carolina.....							
Ohio.....							
Pennsylvania.....	24	175,000	276,862	307	11	78,662	464,525
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	46	331,950	754,379	434	25	127,320	1,028,735

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	ENGRAVERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$1,500	\$550	5		\$2,040	\$4,300
Delaware.....							
District of Columbia...	1	1,000	750	3		1,800	5,000
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....	3	2,500	1,495	7		3,480	7,130
Massachusetts.....	33	43,185	98,770	99	1	56,736	118,225
Michigan.....							
Mississippi.....							
Missouri.....	2	2,500	900	4		3,000	7,600
New Hampshire.....							
New Jersey.....	2	4,000	675	8		2,736	4,100
New York.....	44	100,630	84,999	239	46	133,256	349,630
North Carolina.....							
Ohio.....	9	5,950	5,650	20		8,640	21,300
Pennsylvania.....	14	10,400	6,725	47		17,028	48,040
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....	1	400	200	1		360	800
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	112	172,065	130,714	433	47	227,776	566,005

No. 1—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	FIRE ENGINES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	1	\$10,000	\$9,300	29		\$6,790	\$19,400
Louisiana							
Maine							
Maryland	3	16,800	5,237	39		10,032	22,350
Massachusetts	2	63,000	50,000	64		25,400	110,000
Michigan							
Mississippi							
Missouri	1	5,000	5,000	8		4,800	12,000
New Hampshire							
New Jersey							
New York	4	30,000	29,950	57		20,400	66,000
North Carolina							
Ohio	3	18,900	14,490	42		15,190	45,400
Pennsylvania	2	9,000	2,360	23		6,840	21,000
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	16	152,700	116,967	948		93,312	296,320

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	FLOUR AND GRIST MILLS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	177	\$505,008	\$615,084	528	5	\$108,900	\$560,341
Arkansas.....	98	51,050	80,425	76	.....	14,388	115,875
California.....	9	43,000	635,772	19	.....	3,924	754,192
Connecticut....	119	347,630	792,569	178	.....	53,412	981,677
Delaware.....	70	531,000	1,072,404	188	.....	57,660	1,214,017
District of Columbia...	7	146,000	422,302	39	.....	14,160	510,440
Florida.....	8	12,500	24,523	14	.....	2,700	28,575
Georgia.....	296	920,537	973,346	491	.....	92,676	1,362,437
Illinois.....	316	1,937,955	4,456,150	848	3	242,976	5,781,483
Indiana.....	462	2,133,147	4,909,094	1,064	3	281,292	5,564,091
Iowa.....	81	617,775	1,552,718	286	6	90,480	2,012,448
Kentucky.....	333	955,871	1,720,264	647	3	129,912	2,162,223
Louisiana.....	96	70,925	74,621	199	.....	30,696	93,939
Maine.....	164	327,400	858,121	193	.....	40,704	246,358
Maryland.....	392	2,107,610	4,558,207	686	1	142,264	5,499,265
Massachusetts....	145	832,450	2,096,547	315	4	108,008	2,475,533
Michigan.....	220	2,006,150	3,456,333	624	.....	202,044	4,093,681
Mississippi.....	116	219,575	412,454	147	1	27,912	461,838
Missouri.....	274	1,365,145	3,852,994	738	3	218,532	5,124,003
New Hampshire....	174	415,200	1,000,304	217	.....	58,452	1,127,016
New Jersey.....	390	2,401,209	3,306,399	707	2	186,036	4,056,761
New York.....	1,442	10,256,000	28,512,561	3,347	2	1,008,948	32,037,121
North Carolina....	385	748,061	1,175,438	543	3	74,692	1,447,211
Ohio.....	1,062	6,036,369	11,620,977	2,282	.....	595,104	14,372,270
Pennsylvania.....	2,512	11,110,985	20,887,384	3,916	.....	206,648	24,115,575
Rhode Island.....	29	32,925	70,778	35	.....	9,312	90,651
South Carolina....	297	627,855	877,200	546	1	85,248	1,151,128
Tennessee.....	395	607,731	1,220,773	544	.....	90,276	1,601,141
Texas.....	14	18,700	32,950	24	.....	4,836	50,540
Vermont.....	83	283,350	539,818	196	1	26,300	719,231
Virginia.....	1,622	5,154,218	8,300,970	2,187	10	571,344	9,408,892
Wisconsin.....	117	1,021,550	2,651,623	390	2	122,688	3,526,223
Minnesota.....	1	2,000	500	1	.....	240	500
New Mexico.....	11	51,300	84,200	43	.....	10,220	158,250
Oregon.....	15	307,400	619,560	43	.....	56,640	891,140
Utah.....	6	27,000	331,625	16	.....	2,220	253,000
Total.....	11,891	54,415,581	112,036,698	23,260	50	5,680,164	126,056,736

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	GAS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	2	\$115,000	\$6,910	9		\$3,936	\$15,000
Delaware							
District of Columbia...	1	50,000	14,900	10		4,900	73,000
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	1	334,000	8,750	32		10,368	38,000
Louisiana	1	1,200,000	52,500	70	2	60,350	216,000
Maine							
Maryland	1	500,000	32,190	52		19,900	156,850
Massachusetts	3	551,000	62,805	72		40,740	163,450
Michigan							
Mississippi							
Missouri	1	220,000	17,190	40		16,800	42,200
New Hampshire							
New Jersey	3	250,000	9,097	14		5,472	31,113
New York	5	1,302,000	130,125	263		88,056	502,000
North Carolina							
Ohio	4	208,500	20,726	64		20,400	82,700
Pennsylvania	5	1,535,000	126,506	290		106,972	422,625
Rhode Island	2	158,500	8,075	14		5,280	26,000
South Carolina	1	250,000	12,000	20		9,600	60,000
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	30	6,674,000	503,074	950	2	320,624	1,221,746

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	GAS FIXTURES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine							
Maryland	2	\$8,000	\$8,998	14		\$4,680	\$19,675
Massachusetts	1	10,000	35,150	90		7,680	51,000
Michigan							
Mississippi							
Missouri	1	5,000	8,000	5		2,400	16,000
New Hampshire	1	25,000	17,330	61		20,880	71,600
New Jersey	1	8,000	10,000	13		3,600	17,000
New York	8	30,500	23,600	55		16,992	53,800
North Carolina							
Ohio							
Pennsylvania	6	16,750	29,001	73		19,080	64,450
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	20	104,250	130,969	241		75,312	293,725

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COTTONS AND WOOLENS, MIXED.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	12	\$138,300	\$177,857	173	69	\$43,512	\$255,390
Louisiana							
Maine							
Maryland							
Massachusetts							
Michigan							
Mississippi	1	5,500	12,500	6	5	1,900	12,700
Missouri							
New Hampshire							
New Jersey							
New York							
North Carolina							
Ohio							
Pennsylvania	90	1,567,900	2,131,529	2,498	1,687	764,040	3,498,541
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	103	1,711,790	2,321,966	2,667	1,901	808,752	3,693,731

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	CUTLERY AND EDGE TOOLS.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama							
Arkansas							
California							
Connecticut	97	\$398,300	\$392,511	891	95	\$398,068	\$641,301
Delaware	1	1,000	544	3		864	2,300
District of Columbia ..	1	300	80	1		312	1,000
Florida							
Georgia	1	4,000	500	4		1,140	2,000
Illinois							
Indiana	9	8,975	5,067	95		7,812	23,650
Iowa							
Kentucky	5	5,500	11,750	17		6,072	20,300
Louisiana	1	3,000	1,000	3		1,800	5,000
Maine	94	17,680	12,367	55		18,060	37,720
Maryland	9	12,100	10,231	44		12,826	37,296
Massachusetts	79	446,850	303,570	984	3	349,584	934,578
Michigan	2	2,300	2,180	10		4,020	8,750
Mississippi							
Missouri	8	22,550	25,170	41		18,552	61,920
New Hampshire	20	53,100	27,118	108		33,394	83,086
New Jersey	25	84,750	86,830	235		76,276	211,420
New York	67	426,220	270,809	839		264,460	645,878
North Carolina							
Ohio	36	161,415	70,672	304		100,044	217,770
Pennsylvania	66	357,465	272,908	627		186,684	692,127
Rhode Island	2	3,800	1,650	7		2,322	6,800
South Carolina	2	550	225	3		684	1,600
Tennessee							
Texas							
Vermont	7	2,200	10,461	33		10,164	40,200
Virginia	6	3,200	3,690	18		4,806	7,905
Wisconsin	1	400	30	2		600	1,200
Minnesota							
New Mexico							
Oregon							
Utah							
Total	401	2,321,695	1,432,462	4,947	28	1,420,844	2,812,941

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	GLUE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	1	\$1,000	\$800	1		\$240	\$1,300
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....	3	2,500	1,390	7		2,184	5,350
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....	1	2,000	2,370	3		840	5,500
Maryland.....	3	90,000	16,050	21		5,460	92,400
Massachusetts.....	14	92,300	69,073	47		13,360	134,975
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....	1	3,000	1,900	3		936	2,500
New Jersey.....	1	10,000	6,000	19		3,600	12,100
New York.....	8	298,500	143,355	115		30,900	290,000
North Carolina.....							
Ohio.....	6	14,000	14,961	34		7,380	22,500
Pennsylvania.....	8	146,250	116,967	134	13	34,994	202,400
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....	1	400	900	1		268	1,300
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	47	519,950	371,616	378	13	99,432	632,405

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	GOLD MINING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	1	\$1,800	.....	12	.....	\$1,152	\$2,139
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California*	923	734,797	.....	3,584	.....	3,440,640	9,008,144
Connecticut .....	.....	.....	.....	.....	.....	.....	.....
Delaware .....	.....	.....	.....	.....	.....	.....	.....
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia	4	54,600	\$900	62	.....	10,360	30,490
Illinois .....	.....	.....	.....	.....	.....	.....	.....
Indiana .....	.....	.....	.....	.....	.....	.....	.....
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky .....	.....	.....	.....	.....	.....	.....	.....
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine .....	.....	.....	.....	.....	.....	.....	.....
Maryland	1	500	.....	7	.....	2,100	1,596
Massachusetts .....	.....	.....	.....	.....	.....	.....	.....
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri .....	.....	.....	.....	.....	.....	.....	.....
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey .....	.....	.....	.....	.....	.....	.....	.....
New York .....	.....	.....	.....	.....	.....	.....	.....
North Carolina	73	637,555	13,564	850	77	143,052	392,733
Ohio .....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania .....	.....	.....	.....	.....	.....	.....	.....
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina	8	54,610	14,571	150	.....	92,212	50,261
Tennessee .....	.....	.....	.....	.....	.....	.....	.....
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont .....	.....	.....	.....	.....	.....	.....	.....
Virginia	5	130,150	28,676	139	3	90,316	65,500
Wisconsin .....	.....	.....	.....	.....	.....	.....	.....
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	1,015	1,814,012	57,711	4,804	80	3,630,832	9,551,853

* A portion of the California returns was lost.

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	COSTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	4	\$2,325	\$575	8		\$2,136	\$1.9
Arkansas							
California							
Connecticut	8	170,300	40,736	305		148,020	95.75
Delaware							
District of Columbia ..	1	600	175	2		730	1.00
Florida							
Georgia	10	8,100	3,604	98		9,420	14.70
Illinois	14	9,475	3,922	23		8,484	15.36
Indiana	24	9,865	7,141	38		11,520	27.98
Iowa	2	700	270	4		980	2.20
Kentucky	22	12,800	8,210	44		11,604	26.25
Louisiana							
Maine							
Maryland	11	14,300	12,050	81		26,676	53.50
Massachusetts	10	38,850	23,805	210		73,620	120.20
Michigan	3	850	800	5		1,656	2.20
Mississippi	1	200	150	1		480	.60
Missouri	24	12,478	7,333	41		16,332	37.94
New Hampshire	2	1,600	382	3		1,080	1.00
New Jersey	3	1,600	1,086	9		2,328	6.20
New York	46	83,850	67,227	285		78,156	128.60
North Carolina	9	4,950	3,021	19		3,876	9.29
Ohio	22	21,485	10,880	80		23,940	46.10
Pennsylvania	55	140,600	64,071	265		72,984	120.46
Rhode Island	1	2,000	150	2		720	1.22
South Carolina	3	1,300	700	8		1,440	3.34
Tennessee	15	6,175	2,151	31		6,960	12.20
Texas							
Vermont	2	2,000	830	7		1,980	4.00
Virginia	14	22,376	9,674	43		11,628	20.20
Wisconsin	4	1,750	770	5		1,519	3.12
Minnesota							
New Mexico							
Oregon							
Utah							
Total	317	577,509	268,673	1,547		518,222	1,072.60

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	HARDWARE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	96	\$1,293,250	\$928,960	1,690	395	\$698,136	\$2,360,190
Delaware	2	2,050	7,914	10		2,880	12,193
District of Columbia							
Florida							
Georgia							
Illinois	1	300	750	2		480	2,000
Indiana	1	500	1,000	2		840	2,000
Iowa							
Kentucky							
Louisiana							
Maine	6	13,000	8,065	33		10,990	29,350
Maryland	2	25,500	17,315	24		6,480	35,000
Massachusetts	99	190,700	367,534	380	51	121,476	588,398
Michigan							
Mississippi							
Missouri	7	4,000	3,650	33		10,560	21,350
New Hampshire	7	30,300	31,745	68		21,600	65,975
New Jersey	14	85,560	88,293	284	33	84,132	232,594
New York	112	755,650	656,977	1,810	44	531,948	1,807,140
North Carolina							
Ohio	8	104,635	73,750	275	16	54,804	162,010
Pennsylvania	39	557,000	485,387	643	15	217,212	894,940
Rhode Island	10	470,000	338,773	668	327	207,516	731,600
South Carolina							
Tennessee	5	3,090	4,775	21		3,048	2,500
Texas							
Vermont	1	3,500	800	6		1,872	5,000
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	340	3,539,025	3,015,688	6,149	861	1,973,904	6,957,770

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	HATS AND CAPS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	3	\$1,550	\$1,500	7	.....	\$1,644	\$4.15
Arkansas	2	600	460	4	.....	840	1.82
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	131	401,350	764,645	1,092	534	108,672	1,328.43
Delaware	4	2,400	3,340	11	2	4,212	11.70
District of Columbia ..	7	27,600	21,285	20	14	10,392	45.50
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia	5	1,675	1,102	13	.....	2,326	4.90
Illinois	18	31,900	36,368	34	53	20,968	75.57
Indiana	29	31,150	21,580	61	21	12,608	65.95
Iowa	1	300	375	1	.....	300	72
Kentucky	27	89,650	73,364	105	91	33,420	146.70
Louisiana	8	11,800	16,350	22	7	13,596	28.14
Maine	11	37,550	68,135	33	99	26,076	126.45
Maryland	46	55,900	120,338	136	184	67,894	202.62
Massachusetts	79	370,788	630,928	436	2,042	376,728	1,122.06
Michigan	6	6,300	5,155	13	12	4,956	12.62
Mississippi	4	1,050	547	6	.....	1,380	2.62
Missouri	25	39,500	37,420	158	17	61,226	122.72
New Hampshire	26	34,300	36,701	46	261	40,248	22.26
New Jersey	70	507,610	1,212,902	1,110	700	439,832	2,222.20
New York	251	1,847,575	3,078,750	2,441	3,343	1,410,538	6,227.00
North Carolina	11	5,630	2,242	22	.....	4,140	1.23
Ohio	74	111,155	107,713	170	75	71,484	222.24
Pennsylvania	233	704,420	793,224	867	708	397,404	1,615.20
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina	2	370	418	5	.....	1,200	1.75
Tennessee	22	2,905	6,865	39	8	10,668	26.37
Texas	1	2,000	4,000	3	1	2,016	2.20
Vermont	9	15,900	7,937	18	58	11,868	22.62
Virginia	38	69,100	43,011	93	30	31,680	102.97
Wisconsin	5	4,000	13,323	6	16	4,104	22.20
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	1,048	4,227,726	7,100,026	8,974	8,226	3,178,700	14,312.24

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	HOSIERY.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California.....							
Connecticut	1	\$200,000	\$27,400	162	240	\$69,600	\$222,000
Delaware							
District of Columbia.....							
Florida							
Georgia.....							
Illinois							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana							
Maine.....							
Maryland.....	1	1,000	425	3		648	1,725
Massachusetts	8	66,100	29,855	64	171	25,320	66,344
Michigan.....							
Mississippi.....							
Missouri.....	1	500	180	2		840	1,800
New Hampshire.....	5	47,600	44,310	114	236	47,016	119,656
New Jersey.....	3	3,700	2,815	10	12	4,452	9,100
New York.....	3	44,000	14,800	26	26	17,472	37,000
North Carolina.....							
Ohio.....	3	1,800	2,650	10	7	3,516	8,400
Pennsylvania.....	59	179,915	232,478	441	796	191,232	561,577
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....	1	120	200	1		240	500
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	85	544,735	415,113	825	1,490	360,336	1,098,192

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	INDIA RUBBER GOODS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	8	\$537,500	\$619,300	444	903	\$264,360	\$1,215,500
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine							
Maryland	2	3,000	12,000	9	8	1,680	12,250
Massachusetts	5	148,000	138,200	101	89	47,880	\$76,000
Michigan							
Mississippi							
Missouri							
New Hampshire	1	100	2,040	3	5	1,680	5,000
New Jersey	6	348,000	236,963	238	226	120,336	721,000
New York	8	299,500	259,550	128	211	58,864	542,500
North Carolina							
Ohio							
Pennsylvania	2	6,600	11,550	10	22	5,088	12,400
Rhode Island	2	115,000	122,125	77	91	37,920	215,000
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	34	1,455,700	1,806,798	1,010	1,558	537,828	\$1,024,335

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON FORGES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	3	\$7,000	\$3,355	34	.....	\$6,940	\$14,000
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	17	494,500	305,154	256	.....	109,648	529,696
Delaware	3	75,000	35,410	47	.....	14,400	58,900
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia	3	9,900	4,136	26	1	3,612	12,384
Illinois .....	.....	.....	.....	.....	.....	.....	.....
Indiana	1	800	1,870	3	.....	960	4,000
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	1	96,000	6,740	53	.....	12,730	33,000
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine .....	.....	.....	.....	.....	.....	.....	.....
Maryland	5	94,500	78,935	90	.....	28,900	136,000
Massachusetts	13	225,800	140,319	160	.....	64,116	253,160
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	1	90,000	94,125	100	.....	36,000	67,900
New Hampshire	1	1,000	1,400	2	.....	720	2,400
New Jersey	62	1,292,093	554,862	915	.....	302,568	1,055,956
New York	64	1,196,950	910,568	962	.....	337,828	1,385,585
North Carolina	30	170,609	5,069	262	18	33,828	137,849
Ohio	10	586,380	479,285	510	.....	203,340	827,692
Pennsylvania	101	3,050,629	1,830,157	2,834	7	829,776	3,075,113
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina .....	.....	.....	.....	.....	.....	.....	.....
Tennessee	21	739,650	543,883	642	51	123,940	760,486
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont	8	63,900	56,644	68	.....	27,360	97,250
Virginia	31	534,300	256,573	714	.....	183,904	562,734
Wisconsin .....	.....	.....	.....	.....	.....	.....	.....
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	375	8,517,011	5,336,505	7,698	77	2,310,760	9,002,705

No. 1 —PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON FOUNDRIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	10	\$179,500	\$97,060	900	.....	\$73,932	\$32,900
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	50	440,400	344,499	807	8	285,168	\$51,000
Delaware	8	194,800	89,843	149	.....	43,360	15,400
District of Columbia ..	2	14,000	18,100	97	.....	8,760	41,300
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia	5	66,500	35,080	94	.....	30,720	25,000
Illinois	27	154,400	148,029	279	.....	94,906	27,100
Indiana	26	178,600	197,423	259	.....	84,300	25,000
Iowa	3	5,500	2,624	15	.....	5,400	5,000
Kentucky	13	118,700	58,760	243	.....	58,890	125,000
Louisiana	8	255,000	74,550	347	.....	132,768	212,000
Maine	31	379,700	127,774	335	1	108,400	20,000
Maryland	18	253,100	220,592	566	.....	185,328	512,000
Massachusetts	64	1,223,550	995,881	1,457	.....	550,638	1,021,000
Michigan	70	221,700	23,470	53	.....	17,100	61,000
Mississippi	6	67,000	39,320	57	.....	30,072	24,000
Missouri	6	218,000	112,614	297	.....	114,190	241,000
New Hampshire	22	130,900	115,482	236	.....	89,412	20,000
New Jersey	56	718,250	454,206	1,134	4	332,172	1,016,000
New York	368	3,751,005	2,390,169	5,416	.....	1,658,860	5,012,000
North Carolina	11	69,000	22,041	94	9	16,404	40,000
Ohio	154	1,639,620	967,194	2,462	1	769,512	2,404,000
Pennsylvania	234	2,309,497	1,483,611	2,872	1	934,880	3,002,000
Rhode Island	6	86,200	14,897	181	.....	77,796	155,000
South Carolina	5	1,180,700	23,181	163	6	30,180	20,000
Tennessee	26	244,400	147,403	229	.....	44,364	25,000
Texas	4	19,000	7,700	46	.....	20,940	60,000
Vermont	33	284,207	169,808	381	.....	124,068	412,000
Virginia	42	276,470	174,959	444	1	122,088	479,000
Wisconsin	11	44,050	37,792	113	.....	34,226	114,000
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	1,319	14,722,749	8,534,024	18,938	31	6,272,912	20,112,000

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON FURNACES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$25,000	\$14,176	40		\$9,600	\$28,896
Arkansas.....							
California.....							
Connecticut.....	19	907,600	968,560	190		38,544	379,600
Delaware.....							
District of Columbia...							
Florida.....							
Georgia.....	3	26,000	23,440	135	29	30,000	79,300
Illinois.....	2	65,000	15,000	150		39,600	93,600
Indiana.....	9	149,500	53,806	158	2	54,492	158,064
Iowa.....							
Kentucky.....	24	1,027,000	278,857	1,904	18	440,328	629,937
Louisiana.....							
Maine.....							
Maryland.....	19	1,033,500	636,225	1,351		321,052	1,048,250
Massachusetts.....	6	468,000	185,841	133		47,016	270,123
Michigan.....	3	79,000	800	5		1,656	2,820
Mississippi.....							
Missouri.....	4	112,300	63,367	234		60,000	194,600
New Hampshire.....	1	4,000	8,550	30		8,160	17,200
New Jersey.....	9	917,000	293,607	575		161,160	425,554
New York.....	29	727,500	541,433	934		288,226	1,067,572
North Carolina.....	1	16,000	2,400	8	1	816	3,400
Ohio.....	33	1,722,000	669,331	2,567		676,908	1,427,838
Pennsylvania.....	178	8,357,525	3,899,359	2,244	20	2,321,724	6,170,625
Rhode Island.....							
South Carolina.....	2	90,000	5,600	150	6	14,568	41,000
Tennessee.....	29	917,335	262,312	1,731	117	253,116	722,690
Texas.....							
Vermont.....	3	88,000	43,900	138		32,916	80,000
Virginia.....	24	593,100	221,111	1,181	14	183,408	538,249
Wisconsin.....	2	18,000	10,435	65		23,240	32,500
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	404	16,648,360	7,538,118	20,847	207	5,011,300	13,421,896

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON MANUFACTURES—MISCELLANEOUS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	8	\$54,475	\$61,297	61		\$23,290	\$114,821
Louisiana.....							
Maine.....	2	2,500	3,280	7		3,120	4,520
Maryland.....	6	4,850	9,624	16		9,268	27,222
Massachusetts.....	18	111,050	106,863	145	1	60,000	528,461
Michigan.....							
Mississippi.....							
Missouri.....	4	27,800	28,100	107		55,224	128,000
New Hampshire.....	4	4,300	1,683	9		3,226	5,324
New Jersey.....	5	2,000	4,630	18	2	4,932	16,000
New York.....	14	204,500	216,911	350		135,984	441,620
North Carolina.....							
Ohio.....	10	45,925	48,812	102		31,044	128,520
Pennsylvania.....	18	126,500	101,444	231		71,688	221,554
Rhode Island.....	7	15,600	11,000	27		9,168	26,413
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	3	4,300	3,100	9		2,712	9,200
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	99	603,800	526,864	1,079	3	409,726	1,465,200

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON MINING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	4	\$80,000		58		\$17,616	\$37,500
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois	2	40,000	\$5,100	20		6,000	10,000
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine							
Maryland	21	34,750		274		64,138	171,675
Massachusetts	3	20,350		17		5,160	14,083
Michigan							
Mississippi							
Missouri							
New Hampshire	1	600		8		1,220	2,500
New Jersey	7	197,000	7,150	160	2	42,424	104,010
New York	29	366,000	14,445	605		167,088	418,650
North Carolina							
Ohio	1	1,000		6		1,872	2,250
Pennsylvania	129	194,075	35,956	1,044	1	284,648	456,900
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	197	923,775	63,651	2,192	3	590,806	1,217,803

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	IRON ROLLING.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.
Alabama.....						
Arkansas.....						
California.....						
Connecticut.....	3	\$176,500	\$919,400	138		\$63,980
Delaware.....						
District of Columbia.....						
Florida.....						
Georgia.....						
Illinois.....						
Indiana.....						
Iowa.....						
Kentucky.....	5	540,500	363,000	410	90	178,536
Louisiana.....						
Maine.....	1	100,000	115,000	290		42,000
Maryland.....	5	198,000	210,564	175		60,180
Massachusetts.....	2	520,000	248,500	212		104,160
Michigan.....						
Mississippi.....						
Missouri.....						
New Hampshire.....	1	3,000	4,200	4		1,584
New Jersey.....	1	200,000	42,500	40		18,790
New York.....	4	181,000	338,575	168		43,800
North Carolina.....						
Ohio.....	1	90,000	98,500	150		48,000
Pennsylvania.....	38	3,184,700	2,682,273	2,299		898,536
Rhode Island.....						
South Carolina.....						
Tennessee.....	1	12,000	18,338	6		1,152
Texas.....						
Vermont.....	1	8,000	17,600	5		1,900
Virginia.....	1	3,000	700	2		600
Wisconsin.....						
Minnesota.....						
New Mexico.....						
Oregon.....						
Utah.....						
Total.....	64	5,214,700	4,363,160	3,809	90	1,451,748

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	LEAD PIPE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia...							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine							
Maryland							
Massachusetts	1	\$40,000	\$120,000	10		\$3,600	\$150,000
Michigan							
Mississippi							
Missouri	2	45,000	75,680	23		9,800	95,000
New Hampshire	3	2,000	4,300	4		1,560	6,446
New Jersey							
New York	2	135,000	318,900	20		6,600	370,000
North Carolina							
Ohio							
Pennsylvania	1	50,000	159,000	13		4,500	175,000
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont	1	250	450	1		144	790
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	10	272,250	678,330	71		26,004	797,166

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	LEAD.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....	1	\$10,000		40		\$8,640	\$15,888
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....	23	64,021	\$364,443	113	7	33,073	634,735
Indiana.....							
Iowa.....	6	57,500	88,555	33		3,372	112,710
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....							
Massachusetts.....							
Michigan.....							
Mississippi.....							
Missouri.....	26	170,450	195,903	248	7	49,960	322,840
New Hampshire.....	1	1,000		3		900	2,600
New Jersey.....							
New York.....							
North Carolina.....							
Ohio.....							
Pennsylvania.....	1	80,000	11,500	25		7,500	27,000
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....	2	141,000	3,980	100	2	20,592	37,000
Wisconsin.....	24	59,225	847,904	175		51,700	971,283
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	156	603,196	1,532,585	737	16	181,756	2,152,688

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	LIME.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	12	\$15,710	\$10,107	36		\$10,894	\$22,430
Delaware.....	3	14,500	7,486	23		5,004	21,755
District of Columbia..	2	5,500	7,875	15		3,132	15,000
Florida.....							
Georgia.....							
Illinois.....	19	10,320	16,522	22		19,752	42,322
Indiana.....	13	7,940	13,828	35		8,064	25,675
Iowa.....	1	600	210	2		360	750
Kentucky.....	12	7,400	1,850	23		4,980	11,200
Louisiana.....							
Maine.....	110	266,849	252,579	306		149,136	374,173
Maryland.....	16	14,930	13,867	46		8,268	22,735
Massachusetts.....	19	21,600	15,374	44		12,576	37,650
Michigan.....	12	10,100	3,510	23		5,148	11,655
Mississippi.....							
Missouri.....	16	5,320	20,800	36		12,012	70,500
New Hampshire.....	1	600	230	1		240	600
New Jersey.....	31	65,550	42,131	63		20,112	101,049
New York.....	94	141,545	115,900	428		105,576	312,150
North Carolina.....	3	2,500	885	11		1,320	3,260
Ohio.....	32	24,645	12,522	29		24,936	42,641
Pennsylvania.....	339	446,803	425,131	1,326	4	319,020	1,025,780
Rhode Island.....	3	21,000	36,450	30		9,276	53,025
South Carolina.....	3	11,000	1,050	10		1,044	3,426
Tennessee.....	1	1,500	225	7		672	1,200
Texas.....							
Vermont.....	6	4,100	4,753	11		2,784	12,256
Virginia.....	3	18,250	8,150	12		3,600	13,687
Wisconsin.....	10	6,500	8,800	34		7,322	25,221
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	761	1,124,072	1,102,775	2,634	4	725,746	2,266,922

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	LOOKING-GLASS AND PICTURE FRAMES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	6	\$15,900	\$43,858	46	76	\$38,488	\$197,940
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	1	8,000	4,450	18		6,480	15,000
Indiana							
Iowa							
Kentucky	3	11,500	7,000	11		3,780	14,000
Louisiana							
Maine	1	100	450	1		360	1,300
Maryland	4	22,500	15,180	30		12,816	35,130
Massachusetts	16	56,100	86,400	115		50,952	174,000
Michigan							
Mississippi							
Missouri							
New Hampshire	4	3,900	3,390	11	3	4,392	14,000
New Jersey	3	9,500	16,357	20		9,276	35,000
New York	36	182,500	223,870	361		132,648	520,300
North Carolina							
Ohio	4	15,100	15,921	27		9,528	35,370
Pennsylvania	29	159,400	127,685	224		88,694	268,255
Rhode Island	1	140	500	1		432	1,000
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	108	445,940	544,980	664	79	347,976	1,252,745

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	LUMBER, SAWING AND PLANING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	173	\$952,473	\$529,970	884	53	\$164,268	\$1,103,481
Arkansas	66	113,575	31,719	274	1	42,828	122,918
California	10	147,200	36,050	114	.....	175,080	850,485
Connecticut	239	308,150	277,831	371	.....	97,392	534,794
Delaware	83	158,180	118,392	224	.....	50,640	236,863
District of Columbia ..	1	5,000	22,500	14	.....	2,400	22,000
Florida	49	271,400	121,216	489	10	99,072	391,034
Georgia	333	1,008,668	277,786	1,200	21	238,356	923,403
Illinois	468	843,535	591,508	1,206	.....	298,524	1,394,484
Indiana	928	1,502,811	858,634	2,263	2	513,216	2,195,351
Iowa	144	204,475	225,135	337	7	81,348	470,760
Kentucky	466	1,022,980	721,889	1,479	11	306,394	1,502,434
Louisiana	138	892,785	273,624	912	36	226,452	1,122,677
Maine	752	3,009,240	3,609,947	4,434	5	1,301,376	5,872,573
Maryland	123	237,850	226,715	265	2	77,892	585,168
Massachusetts	448	1,369,275	834,847	1,235	2	396,576	1,552,265
Michigan	558	1,680,875	967,525	2,730	.....	740,076	2,464,329
Mississippi	259	711,130	332,141	1,059	20	221,622	913,197
Missouri	334	633,109	623,518	1,176	44	289,022	1,479,124
New Hampshire	545	859,305	622,564	969	.....	265,068	1,099,422
New Jersey	324	226,500	646,209	665	.....	177,180	1,123,052
New York	4,625	8,032,963	6,613,130	10,840	.....	2,863,188	12,196,759
North Carolina	299	1,057,685	420,207	1,126	9	198,984	985,075
Ohio	1,639	2,600,361	1,693,688	3,754	2	924,084	2,864,452
Pennsylvania	2,824	6,913,267	3,869,558	6,234	118	1,787,520	7,729,058
Rhode Island	51	126,700	142,768	134	.....	60,252	241,556
South Carolina	353	1,106,033	525,844	1,422	2	203,220	1,108,880
Tennessee	451	707,280	283,607	1,226	3	192,612	725,387
Texas	29	300,075	156,148	411	15	96,912	466,012
Vermont	226	426,025	303,306	606	.....	153,288	618,065
Virginia	2	17,000	412,536	10	.....	2,460	277,412
Wisconsin	278	1,006,822	526,237	1,480	89	412,340	1,212,516
Minnesota	4	22,000	23,800	62	.....	18,300	57,800
New Mexico	1	5,000	10,000	4	.....	864	20,000
Oregon	37	526,200	190,000	242	.....	331,980	1,355,500
Utah	5	12,400	.....	18	.....	4,260	14,620
Total	17,826	40,032,427	27,523,522	51,766	452	13,022,052	58,520,966

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MACHINISTS AND MILLWRIGHTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	19	\$70,900	\$30,930	133	.....	\$45,444	\$10,73
Arkansas	3	47,000	4,150	16	.....	4,498	3.00
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	47	471,700	203,576	808	.....	294,568	75,45
Delaware	8	942,000	160,932	340	.....	97,560	38.94
District of Columbia	1	7,000	6,908	94	.....	8,112	17.00
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia	4	39,000	19,080	84	.....	34,296	8.00
Illinois	22	138,450	72,943	216	.....	80,772	25.35
Indiana	16	125,300	90,905	222	.....	72,864	23.57
Iowa	1	800	1,500	5	.....	1,800	4.20
Kentucky	13	179,225	146,940	255	.....	84,984	13.70
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine	29	1,176,375	941,300	640	9	234,792	62.19
Maryland	24	481,500	234,543	1,617	.....	365,496	94.10
Massachusetts	168	4,925,900	2,600,294	5,188	.....	1,983,166	5,220.46
Michigan	17	159,400	120,520	265	.....	128,004	22.69
Mississippi	1	20,000	7,500	40	.....	14,400	3.00
Missouri	8	109,800	98,900	125	.....	80,040	22.55
New Hampshire	34	941,800	205,709	637	.....	242,556	60.17
New Jersey	44	610,700	342,725	912	42	304,672	80.12
New York	265	4,338,170	3,603,768	7,734	10	2,604,444	8,422.74
North Carolina	4	22,000	13,650	45	.....	15,816	3.20
Ohio	93	1,203,048	936,183	1,694	1	571,356	2,153.85
Pennsylvania	125	3,251,450	1,807,800	4,874	1	1,502,268	4,214.23
Rhode Island	37	615,250	403,347	1,248	.....	487,608	1,224.72
South Carolina	4	71,600	15,000	99	.....	22,140	7.20
Tennessee	10	8,050	13,700	35	.....	9,906	3.20
Texas	2	2,000	4,000	11	.....	3,940	1.50
Vermont	17	225,700	111,320	321	.....	141,420	35.60
Virginia	20	330,300	203,845	222	2	149,184	42.50
Wisconsin	11	81,800	42,122	120	.....	45,264	12.70
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	1,021	19,225,918	11,267,726	27,634	58	2,639,912	27,200.50

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MATCHES, FRICTION.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	9	\$25,600	\$24,630	40	119	\$27,612	\$71,730
Delaware							
District of Columbia	1	70	700	1		480	1,225
Florida							
Georgia							
Illinois	2	1,500	1,525	10		1,390	3,040
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	3	1,100	5,471	6	16	3,564	11,775
Maryland	1	200	250	2	6	1,300	5,000
Massachusetts	8	16,800	30,815	37	51	19,296	62,810
Michigan	1	20	20	1		200	500
Mississippi							
Missouri	2	3,020	5,100	21		4,080	10,600
New Hampshire	4	1,060	3,555	5	3	1,608	7,110
New Jersey							
New York	16	50,990	49,123	302	258	78,600	197,598
North Carolina							
Ohio	5	1,130	1,635	8	6	2,664	9,375
Pennsylvania	3	5,800	9,930	26	73	10,476	32,690
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont	1	300	300	2		480	1,900
Virginia							
Wisconsin	2	1,550	4,400	18	6	3,000	12,000
Minnesota							
New Mexico							
Oregon							
Utah							
Total	60	109,140	127,614	481	540	154,620	427,823

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MATHEMATICAL INSTRUMENTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$4,600	\$6,025	21	4	\$8,443	\$16,300
Delaware.....							
District of Columbia..	2	3,500	850	5		1,920	5,600
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....	1	400	400	1		350	700
Maryland.....	4	3,600	2,140	8		4,000	8,900
Massachusetts.....	22	61,300	53,821	127	10	52,104	142,335
Michigan.....							
Mississippi.....							
Missouri.....	2	8,000	804	8		3,528	2,000
New Hampshire.....							
New Jersey.....	2	33,000	8,525	42		12,720	20,000
New York.....	41	172,550	70,381	340	20	150,516	415,375
North Carolina.....							
Ohio.....	4	8,600	2,750	19	4	6,456	16,300
Pennsylvania.....	5	12,500	10,550	19		9,192	22,000
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	4	11,500	9,420	34	2	11,568	26,000
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	90	326,550	165,066	624	40	260,812	751,300

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MEDICINES, DRUGS, AND DYE STUFFS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	2	\$175,000	\$98,000	80		\$37,840	\$155,000
Delaware.....	13	53,350	42,008	60		13,944	84,865
District of Columbia.....							
Florida.....							
Georgia.....	1	1,000	300	2		600	5,000
Illinois.....	2	10,600	20,100	8		1,200	50,800
Indiana.....	3	700	1,620	3	1	924	3,428
Iowa.....							
Kentucky.....	21	163,075	213,800	89		25,248	261,015
Louisiana.....							
Maine.....	3	2,000	27,000	16	10	8,756	52,000
Maryland.....	3	1,650	5,130	7		2,196	15,500
Massachusetts.....	23	184,800	305,752	88	10	34,178	541,307
Michigan.....	1	1,000	1,777	3		900	3,000
Mississippi.....	1	1,000	1,777	3		900	3,000
Missouri.....	4	24,000	12,450	21	5	6,980	119,000
New Hampshire.....	2	1,200	385	10	2	2,568	6,000
New Jersey.....	2	1,500	1,900	2		588	4,500
New York.....	19	461,700	379,135	197	41	78,740	1,106,000
North Carolina.....							
Ohio.....	9	11,300	15,670	26	16	10,800	54,200
Pennsylvania.....	27	267,300	463,325	120	49	53,664	847,400
Rhode Island.....	4	37,600	66,950	28		9,204	89,650
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	2	1,100	1,100	8		1,800	6,500
Virginia.....	1	500	700	2		480	2,100
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	143	1,427,375	1,657,825	623	134	276,488	3,508,465

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MINERAL WATER AND POP.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	8	\$13,800	\$21,530	21	19	\$6,280	\$57,90
Delaware.....	1	2,400	3,900	6		1,200	5.00
District of Columbia..							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....	3	6,000	1,450	27		2,730	12.00
Maine.....	2	3,000	1,765	8		1,500	7.30
Maryland.....	3	2,400	8,080	22		5,304	27.23
Massachusetts.....	2	18,000	30,337	22		8,700	54.28
Michigan.....							
Mississippi.....							
Missouri.....	4	15,000	10,100	83		22,080	55.50
New Hampshire.....							
New Jersey.....	5	10,500	7,940	26		4,920	22.50
New York.....	16	44,550	101,115	131		33,300	202.22
North Carolina.....							
Ohio.....	5	11,700	13,090	43		2,276	54.67
Pennsylvania.....	13	20,500	109,975	172		47,056	252.37
Rhode Island.....							
South Carolina.....							
Tennessee.....	1	2,000	1,175	3		1,020	3.30
Texas.....							
Vermont.....							
Virginia.....	1	2,800	3,974	6		1,520	5.00
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	64	228,650	313,631	570	19	153,916	722.22

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MILLINERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	2	\$5,000	\$16,000	.....	15	\$3,600	\$40,000
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	27	34,350	64,279	2	140	20,460	108,546
Delaware .....	.....	.....	.....	.....	.....	.....	.....
District of Columbia..	1	500	300	.....	2	216	750
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	4	3,800	32,500	.....	12	3,420	57,700
Illinois.....	7	13,220	16,800	.....	26	4,632	32,500
Indiana.....	2	600	150	.....	5	600	1,100
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	12	24,250	28,400	.....	71	14,640	50,720
Louisiana	8	25,200	40,800	.....	37	8,220	56,700
Maine.....	4	3,550	3,450	.....	12	1,476	6,100
Maryland	51	26,275	74,912	.....	202	26,488	151,200
Massachusetts.....	40	70,075	223,221	22	226	66,612	328,844
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	11	12,000	15,222	1	63	8,352	41,200
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey	19	14,600	25,047	2	90	13,548	44,200
New York	162	222,200	622,206	126	1,262	340,428	1,224,426
North Carolina .....	.....	.....	.....	.....	.....	.....	.....
Ohio	10	8,100	16,060	.....	50	8,184	30,650
Pennsylvania	132	122,548	203,214	8	525	62,420	322,221
Rhode Island	4	1,500	2,526	.....	12	2,352	5,640
South Carolina.....	2	1,100	.....	.....	7	840	2,400
Tennessee	1	1,200	8,000	.....	10	2,400	16,225
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont	3	225	1,410	.....	4	600	2,415
Virginia.....	18	26,100	22,028	1	62	2,422	42,500
Wisconsin.....	4	1,200	3,100	.....	17	2,256	8,220
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	522	620,123	1,426,266	121	3,622	610,236	2,721,222

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MILLSTONES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....	1	\$700	\$635	1		\$480	\$1.20
District of Columbia.....							
Florida.....							
Georgia.....	2	6,100	4,275	5		2,556	8.50
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....							
Maryland.....	2	5,600	6,125	9		3,240	7.00
Massachusetts.....							
Michigan.....							
Mississippi.....							
Missouri.....	2	10,200	5,200	12		4,080	11.25
New Hampshire.....							
New Jersey.....							
New York.....							
North Carolina.....							
Ohio.....	12	50,175	39,181	48		18,128	100.25
Pennsylvania.....							
Rhode Island.....							
South Carolina.....							
Tennessee.....	2	2,000	2,385	8		2,700	10.25
Texas.....							
Vermont.....							
Virginia.....	2	6,000	4,000	4		1,260	6.25
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	23	81,835	61,791	87		32,508	164.75

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MOROCCO DRESSERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	6	\$23,500	\$66,918	58	3	\$23,948	\$111,500
Delaware.....							
District of Columbia...							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....							
Maine.....	2	17,000	15,500	23		7,900	33,600
Maryland.....							
Massachusetts.....	33	246,700	551,007	392	15	142,684	\$66,916.
Michigan.....							
Mississippi.....							
Missouri.....	1	10,000	48,500	10		3,360	90,000
New Hampshire.....							
New Jersey.....	6	36,600	74,660	63	6	21,816	119,600
New York.....	35	346,900	794,145	471	36	166,104	1,343,600
North Carolina.....							
Ohio.....	2	3,150	9,506	17		5,100	19,000
Pennsylvania.....	31	704,600	736,750	762	111	255,060	1,276,379
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	116	1,387,750	2,266,995	1,706	171	633,772	3,261,686

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	MUSICAL INSTRUMENTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	12	\$41,800	\$12,680	66	4	\$94,708	\$52,175
Delaware							
District of Columbia..	2	1,300	480	2		1,200	1.85
Florida							
Georgia							
Illinois	1	3,000	2,000	4		1,920	6.00
Indiana							
Iowa							
Kentucky	4	7,700	3,100	19		8,616	17.50
Louisiana	4	17,860	11,000	15		9,000	30.50
Maine	2	4,000	5,025	5	20	7,992	16.70
Maryland	14	64,700	34,384	177		68,952	137.00
Massachusetts	49	505,100	254,505	743		410,136	903.512
Michigan	1	3,000	2,650	7		2,680	9.00
Mississippi							
Missouri	3	4,500	1,140	7		2,040	7.70
New Hampshire	11	38,600	9,985	69		20,784	42.70
New Jersey	3	8,500	2,847	13		5,628	12.00
New York	58	674,500	284,919	948		403,168	1,072.243
North Carolina							
Ohio	12	15,180	8,247	56		20,712	44.64
Pennsylvania	21	147,300	53,616	148		58,484	169.220
Rhode Island	1	800	185	3		190	1.60
South Carolina							
Tennessee							
Texas							
Vermont	5	5,775	3,425	23		7,620	14.70
Virginia							
Wisconsin	1	2,400	400	3		768	2.42
Minnesota							
New Mexico							
Oregon							
Utah							
Total	204	1,545,935	698,168	2,307	24	1,054,798	2,508.72

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	NAILS.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia ..							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	1	\$13,000	\$2,500	5		\$1,800	\$7,500
Louisiana.....							
Maine.....							
Maryland.....	8	121,550	98,717	203		48,132	224,100
Massachusetts.....	25	1,746,900	1,739,993	1,838	1	631,644	2,760,874
Michigan.....							
Mississippi.....							
Missouri.....	1	100	384	1		192	1,500
New Hampshire.....							
New Jersey.....	2	8,300	12,003	17	3	3,480	23,620
New York.....	13	493,700	1,056,298	980		355,284	1,872,962
North Carolina.....							
Ohio.....	2	2,850	39,588	63		26,100	68,254
Pennsylvania.....	23	1,594,187	1,085,133	1,458		511,488	1,904,393
Rhode Island.....	2	209,400	112,123	222		69,420	223,650
South Carolina.....	1	15,000	5,250	10		960	20,000
Tennessee.....	2	7,000	6,065	9		1,584	10,237
Texas.....							
Vermont.....	1	6,000	8,850	6		1,800	10,836
Virginia.....	6	210,511	274,052	415		161,088	533,518
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	87	4,438,498	4,438,976	5,227	4	1,812,972	7,662,144

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OIL, CASTOR.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$1,000	\$3,000	2	.....	\$340	\$1.00
Arkansas.....	1	500	750	2	.....	600	2.00
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	.....	.....	.....	.....	.....	.....	.....
Delaware.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia...	.....	.....	.....	.....	.....	.....	.....
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....	.....	.....	.....
Illinois.....	10	13,930	28,460	33	.....	8,880	62.60
Indiana.....	.....	.....	.....	.....	.....	.....	.....
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....	.....	.....	.....
Louisiana.....	.....	.....	.....	.....	.....	.....	.....
Maine.....	.....	.....	.....	.....	.....	.....	.....
Maryland.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	.....	.....	.....	.....	.....	.....	.....
Michigan.....	.....	.....	.....	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	3	92,500	348,000	84	.....	28,964	64.20
New Hampshire.....	.....	.....	.....	.....	.....	.....	.....
New Jersey.....	.....	.....	.....	.....	.....	.....	.....
New York.....	.....	.....	.....	.....	.....	.....	.....
North Carolina.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	2	42,000	56,400	11	.....	3,730	61.00
Pennsylvania.....	1	500	3,700	2	.....	480	1.60
Rhode Island.....	.....	.....	.....	.....	.....	.....	.....
South Carolina.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	2	1,600	1,000	5	.....	900	2.10
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	3	800	7,755	8	.....	2,100	11.30
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	23	152,820	447,065	147	.....	43,684	521.60

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OIL, LARD.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....	4	\$12,800	\$56,076	8		\$2,424	\$76,494
Iowa.....	1	10,000	6,080	5		1,880	10,000
Kentucky.....	2	2,500	11,500	4		1,560	15,000
Louisiana.....							
Maine.....							
Maryland.....							
Massachusetts.....	3	98,000	283,835	22	1	8,184	327,500
Michigan.....							
Mississippi.....							
Missouri.....	1	3,000	10,000	2		720	12,608
New Hampshire.....							
New Jersey.....							
New York.....							
North Carolina.....							
Ohio.....	23	182,050	723,591	116	10	35,568	241,915
Pennsylvania.....	6	46,600	151,780	22		7,440	188,002
Rhode Island.....							
South Carolina.....							
Tennessee.....	1	8,000	28,740	3		1,900	48,150
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	41	362,950	1,271,602	182	11	58,966	1,617,069

No 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OIL, LINED.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama .....	.....	.....	.....	.....	.....	.....	.....
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	3	\$15,000	\$14,000	7	.....	\$2,908	\$19,865
Delaware .....	.....	.....	.....	.....	.....	.....	.....
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....	.....
Illinois	1	2,000	1,637	1	.....	360	4,600
Indiana	6	22,600	23,680	20	.....	5,435	31,725
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	1	25,000	76,400	12	.....	4,608	106,400
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine	1	30,000	22,700	6	.....	2,180	26,100
Maryland	2	13,000	32,250	8	.....	1,800	2,200
Massachusetts	2	85,000	253,500	57	2	24,108	207,300
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	2	13,500	52,000	11	.....	3,504	65,000
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey	8	32,100	32,448	11	.....	3,312	42,325
New York	29	308,800	393,766	115	.....	37,404	514,670
North Carolina	13	15,650	10,953	16	.....	2,160	12,600
Ohio	34	207,500	278,636	108	.....	32,112	408,455
Pennsylvania	46	106,700	222,052	79	.....	19,322	312,704
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina .....	.....	.....	.....	.....	.....	.....	.....
Tennessee	3	1,500	1,075	4	.....	684	2,632
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont	7	9,800	23,502	10	.....	2,652	32,700
Virginia	9	6,600	2,396	11	.....	1,680	5,877
Wisconsin	1	1,100	650	1	.....	84	1,200
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	168	896,650	1,477,645	477	2	143,664	1,948,134

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OIL, WHALE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	1	\$3,000	\$15,000	2		\$750	\$10,000
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine							
Maryland							
Massachusetts	29	1,269,000	3,598,141	228		83,616	4,049,860
Michigan							
Mississippi							
Missouri							
New Hampshire							
New Jersey	1	24,000	252,150	35		12,000	325,000
New York	18	1,425,000	2,577,175	220	52	99,732	3,360,190
North Carolina							
Ohio							
Pennsylvania	1	60,000	50,410	7		2,400	80,000
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	50	2,791,000	6,492,876	492	52	198,468	7,830,980

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OILS, MISCELLANEOUS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	2	\$22,000	\$37,200	6		\$1,630	\$42,500
Maryland							
Massachusetts							
Michigan	2	700	2,250	4		840	5,000
Mississippi							
Missouri	1	11,000	3,000	4		1,920	9,000
New Hampshire							
New Jersey							
New York							
North Carolina	2	650		39		7,488	2,700
Ohio	1	200	353	2		360	1,634
Pennsylvania							
Rhode Island	1	500	1,300	2		720	2,820
South Carolina							
Tennessee							
Texas							
Vermont	1	150		1		120	500
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	10	35,900	44,103	58		13,198	63,674

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	OILCLOTHS.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.
Alabama.....						
Arkansas.....						
California.....						
Connecticut.....	1	\$12,000	\$7,900	6		\$4,016
Delaware.....						
District of Columbia.....						
Florida.....						
Georgia.....						
Illinois.....						
Indiana.....						
Iowa.....						
Kentucky.....	2	3,000	5,500	12		2,640
Louisiana.....						
Maine.....	6	31,900	290,072	84		19,206
Maryland.....	1	6,000	8,000	5		1,200
Massachusetts.....	1	600	1,025	3		900
Michigan.....						
Mississippi.....						
Missouri.....	1	15,000	6,000	20		6,480
New Hampshire.....	2	10,300	21,100	15		4,560
New Jersey.....	4	77,800	97,034	83	2	25,524
New York.....	19	373,200	314,250	242		70,128
North Carolina.....						
Ohio.....	2	2,200	15,000	27		7,200
Pennsylvania.....	17	108,700	134,525	151		39,000
Rhode Island.....						
South Carolina.....						
Tennessee.....						
Texas.....						
Vermont.....						
Virginia.....						
Wisconsin.....						
Minnesota.....						
New Mexico.....						
Oregon.....						
Utah.....						
Total.....	56	640,700	822,706	648	2	178,854

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PAPER.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	1	\$10,000	\$8,000	6	4	\$1,776	\$18,000
Arkansas							
California							
Connecticut	43	964,100	968,709	507	429	220,104	1,726,685
Delaware	3	106,900	90,674	28	16	11,256	112,940
District of Columbia ..							
Florida							
Georgia	2	62,000	10,550	16	13	4,186	25,000
Illinois	1	26,943	7,800	13	5	5,400	20,500
Indiana	5	64,000	43,600	42	32	15,600	94,500
Iowa							
Kentucky	3	92,000	87,250	51	26	18,072	125,000
Louisiana							
Maine	6	117,000	81,700	68	47	26,186	172,500
Maryland	25	134,300	118,668	117	69	26,812	224,300
Massachusetts	77	1,815,900	1,507,588	831	863	374,916	2,601,622
Michigan	1	3,000	3,550	4	6	2,016	15,000
Mississippi							
Missouri							
New Hampshire	15	144,500	90,184	97	36	30,120	285,000
New Jersey	32	732,500	535,570	292	215	120,384	866,400
New York	106	1,318,633	844,908	823	444	271,684	1,634,500
North Carolina	2	27,000	4,905	6	7	1,736	7,000
Ohio	25	520,800	303,676	348	221	130,776	791,000
Pennsylvania	61	683,413	579,094	344	281	123,264	1,036,600
Rhode Island	3	44,000	24,220	23		7,560	45,000
South Carolina	2	30,000	9,500	14	78	3,264	22,200
Tennessee	7	40,475	21,125	28	16	8,646	40,000
Texas							
Vermont	15	152,900	131,688	100	90	39,252	252,500
Virginia	7	113,900	73,650	70	48	39,312	147,000
Wisconsin	1	8,000	10,000	7	4	2,260	15,000
Minnesota							
New Mexico							
Oregon							
Utah							
Total	443	7,260,264	5,553,929	3,835	2,960	1,497,792	10,157,000

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PERFUMES AND FANCY SOAPS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	5	\$11,000	\$8,080	11	3	\$4,152	\$17,500
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	2	5,000	1,900	10		1,900	5,000
Louisiana ..	2	1,600	900	6	1	1,560	4,300
Maine	1	500	525	2		540	1,900
Maryland	2	650	2,700	5		1,584	9,800
Massachusetts	3	6,800	5,900	4	3	2,944	16,500
Michigan							
Mississippi							
Missouri ..	1	2,000	2,000	3		1,900	5,000
New Hampshire							
New Jersey							
New York	4	16,000	11,300	6	12	2,928	41,000
North Carolina							
Ohio	3	4,500	16,300	12		4,800	25,200
Pennsylvania	16	149,500	114,211	66	44	22,812	229,150
Rhode Island ..							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	30	197,550	163,898	125	63	43,720	355,350

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PLASTER.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Value of product.
Alabama.....						
Arkansas.....						
California.....						
Connecticut.....	16	\$23,800	\$14,512	17	\$1,548	\$21,270
Delaware.....						
District of Columbia..	1	5,000	2,600	5	1,500	5,000
Florida.....						
Georgia.....						
Illinois.....						
Indiana.....						
Iowa.....						
Kentucky.....						
Louisiana.....						
Maine.....	10	84,700	23,225	102	26,222	52,222
Maryland.....	2	10,000	14,562	14	3,840	21,562
Massachusetts.....	3	13,600	21,700	12	4,812	31,200
Michigan.....	3	11,100	7,250	9	2,280	16,630
Mississippi.....						
Missouri.....						
New Hampshire.....						
New Jersey.....	6	16,000	5,850	8	1,776	8,256
New York.....	26	227,940	127,332	173	43,620	226,325
North Carolina.....						
Ohio.....	1	16,000	15,200	39	11,400	35,000
Pennsylvania.....						
Rhode Island.....						
South Carolina.....						
Tennessee.....						
Texas.....						
Vermont.....	2	2,300	6,225	2	624	2,670
Virginia.....						
Wisconsin.....						
Minnesota.....						
New Mexico.....						
Oregon.....						
Utah.....						
Total.....	140	410,440	232,063	381	100,622	426,214


No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PLUMBERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$3,700	\$11,790	6		\$2,188	\$18,750
Delaware.....							
District of Columbia...	2	5,000	6,400	10		3,456	11,500
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	2	2,300	1,700	9		2,520	5,700
Louisiana.....							
Maine.....	2	700	1,000	2		816	1,200
Maryland.....	12	17,450	41,090	59		22,380	82,750
Massachusetts.....	15	68,500	115,346	135		64,226	226,325
Michigan.....							
Mississippi.....							
Missouri.....	6	6,750	11,450	24		8,076	30,600
New Hampshire.....							
New Jersey.....							
New York.....	46	422,000	230,872	545	2	190,584	1,570,827
North Carolina.....							
Ohio.....	6	14,100	38,447	43		16,788	80,305
Pennsylvania.....	29	104,725	136,094	201	1	65,760	225,350
Rhode Island.....							
South Carolina.....							
Tennessee.....	1	1,000	3,000	3		1,080	4,300
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	194	646,225	1,227,119	1,037	3	377,944	2,343,607

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PORK AND BEEF PACKING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia...							
Florida.....							
Georgia.....							
Illinois.....	11	\$92,300	\$418,567	945		\$103,360	\$88,311
Indiana.....	44	453,300	1,529,632	757		330,816	2,222,722
Iowa.....	8	138,000	207,000	176		56,760	272,694
Kentucky.....	11	509,500	1,300,450	802	5	338,640	1,628,866
Louisiana.....							
Maine.....	2	21,000	13,257	7		1,932	12,500
Maryland.....	6	170,000	298,400	51		18,000	622,471
Massachusetts.....							
Michigan.....							
Mississippi.....							
Missouri.....	33	542,570	965,478	522	1	155,268	1,128,127
New Hampshire.....							
New Jersey.....							
New York.....	11	149,500	1,387,150	63		22,920	1,674,422
North Carolina.....							
Ohio.....	45	1,656,130	2,845,922	463		156,568	3,222,122
Pennsylvania.....	8	282,000	344,850	31		12,336	411,766
Rhode Island.....							
South Carolina.....							
Tennessee.....	2	33,000	75,000	22	3	21,240	125,400
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....	4	35,200	67,300	31		7,656	221,500
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	185	3,462,500	9,451,066	3,267	9	1,231,536	11,222,122

No. 1.—PRINCIPAL MANUFACTURES—Continued.



States and Territories.	Number of establishments.	POTTERIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	9	\$4,100	\$790	41	3	\$6,024	\$13,250
Arkansas.....							
California.....							
Connecticut.....	7	26,900	10,780	48		15,408	47,000
Delaware.....	3	2,900	3,485	10		2,520	8,400
District of Columbia...	2	1,200	1,550	3		1,092	4,975
Florida.....							
Georgia.....	3	1,470	1,750	11		2,690	5,770
Illinois.....	25	18,300	5,122	77		19,080	48,376
Indiana.....	31	24,850	5,380	69		16,212	40,770
Iowa.....	4	2,100	1,280	17		4,620	7,050
Kentucky.....	12	13,125	6,794	58	2	15,236	39,060
Louisiana.....	1	1,200	690	9		5,400	18,000
Maine.....	13	10,450	3,641	30		9,144	15,260
Maryland.....							
Massachusetts.....	15	56,400	20,451	91		34,368	73,750
Michigan.....	4	1,620	370	8		2,222	3,900
Mississippi.....							
Missouri.....	13	15,310	4,605	56		15,408	31,150
New Hampshire.....	5	3,500	714	9		3,000	5,132
New Jersey.....	30	182,552	46,925	225	15	80,880	230,900
New York.....	43	171,550	53,469	226	2	24,440	240,182
North Carolina.....	8	2,600	1,475	20		2,976	6,000
Ohio.....	120	118,813	41,175	540	16	122,626	248,020
Pennsylvania.....	114	162,967	51,631	405		104,400	258,635
Rhode Island.....							
South Carolina.....	6	10,300	520	31	5	5,352	12,750
Tennessee.....	7	1,030	1,769	16		2,976	6,340
Texas.....	2	1,000	275	4		1,320	5,000
Vermont.....	4	27,300	7,775	79		25,620	85,073
Virginia.....							
Wisconsin.....	3	8,000	2,527	20		6,504	12,000
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	484	777,544	275,063	2,246	43	607,418	1,466,063

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	GUNPOWDER.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	4	\$248,000	\$177,900	98	2	\$44,580	\$308,000
Delaware	3	260,000	142,050	169		40,560	375,000
District of Columbia ..							
Florida							
Georgia							
Illinois	1	10,000	2,850	4		1,200	8,000
Indiana							
Iowa							
Kentucky	1	7,523	3,938	4	1	744	5,100
Louisiana							
Maine	3	19,000	32,215	20		7,532	50,240
Maryland	2	64,000	10,211	9		2,268	16,750
Massachusetts	8	251,900	130,453	79		32,184	221,000
Michigan							
Mississippi							
Missouri							
New Hampshire	1	10,000	27,000	6		1,440	35,000
New Jersey							
New York	6	191,000	178,145	56		24,504	278,530
North Carolina							
Ohio	2	33,000	13,469	13		2,856	28,530
Pennsylvania	19	62,300	86,502	54		16,740	146,542
Rhode Island							
South Carolina							
Tennessee	1	1,900	5,984	8		1,440	15,700
Texas							
Vermont	2	17,000	48,300	52		15,000	88,000
Virginia							
Wisconsin	1	5,000	4,000	4		1,440	6,000
Minnesota							
New Mexico							
Oregon							
Utah							
Total	54	1,179,223	860,997	576	3	192,568	1,506,330

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	PRINTERS AND PUBLISHERS.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama.....	2	\$2,300	\$680	5	.....	\$2,400	\$3,900
Arkansas.....	3	2,400	360	6	.....	1,800	3,950
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut....	47	293,950	239,923	299	100	157,980	577,850
Delaware.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia...	6	108,000	66,725	152	33	77,736	184,500
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	8	27,400	14,825	43	.....	17,316	64,900
Illinois.....	7	9,300	5,560	27	.....	6,300	18,475
Indiana.....	20	55,500	27,042	143	.....	29,496	92,648
Iowa.....	2	1,400	790	5	.....	1,260	5,450
Kentucky.....	12	58,000	33,637	137	.....	52,836	131,900
Louisiana.....	3	10,000	11,700	20	.....	12,000	28,500
Maine.....	14	35,400	52,000	80	40	32,340	119,968
Maryland.....	28	194,685	151,753	265	7	90,694	379,569
Massachusetts.....	112	794,950	531,021	1,003	150	437,748	1,493,323
Michigan.....	3	8,300	3,865	20	.....	4,800	20,000
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	4	8,500	3,830	32	.....	6,960	22,150
New Hampshire.....	8	34,500	22,502	41	33	15,264	44,706
New Jersey.....	7	18,250	10,904	51	.....	12,940	36,142
New York.....	200	3,081,625	3,036,030	3,020	782	1,197,526	6,163,209
North Carolina.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	57	189,597	194,557	305	64	115,894	357,565
Pennsylvania.....	102	238,618	597,907	1,108	86	419,004	1,717,612
Rhode Island.....	.....	.....	.....	.....	.....	.....	.....
South Carolina.....	2	3,000	1,010	7	.....	2,976	5,500
Tennessee.....	7	21,600	7,429	45	.....	17,968	45,695
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	6	16,000	6,800	20	4	7,140	12,950
Virginia.....	5	7,800	6,550	20	.....	4,360	12,000
Wisconsin.....	8	11,200	6,825	55	.....	13,368	28,696
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	673	5,682,715	4,964,235	6,969	1,279	2,737,308	11,568,549

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SADDLES AND HARNESS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	32	\$90,600	\$18,561	75	.....	\$21,300	\$53,671
Arkansas.....	12	4,415	6,781	94	1	6,006	16,311
California.....	69	176,050	313,672	1,983	179	181,056	704,615
Connecticut	7	9,450	8,033	25	.....	6,960	31,320
Delaware.....	11	15,750	19,415	36	1	11,958	26,126
District of Columbia ..	9	3,600	900	5	.....	1,740	2,700
Florida.....	31	55,615	53,361	193	.....	36,436	118,406
Georgia.....	135	140,900	165,611	473	9	127,344	444,492
Illinois.....	900	156,340	166,948	531	9	133,908	402,415
Indiana.....	19	25,700	31,600	60	.....	15,372	57,704
Iowa.....	943	275,254	239,317	794	14	193,128	647,616
Louisiana.....	19	16,150	14,979	43	.....	17,544	45,624
Maine.....	47	31,300	45,964	112	.....	33,148	75,553
Maryland.....	73	90,195	90,634	292	8	83,040	222,404
Massachusetts ...	142	136,300	162,191	387	7	134,916	265,302
Michigan.....	51	43,370	46,990	133	1	36,088	101,520
Mississippi.....	44	67,350	65,675	111	3	43,836	154,442
Missouri.....	103	125,636	240,265	499	17	173,868	548,328
New Hampshire	65	47,325	47,914	135	2	42,338	115,061
New Jersey.....	91	401,980	470,932	685	40	218,340	805,161
New York.....	709	636,990	718,879	1,972	19	544,308	1,621,721
North Carolina	53	62,525	51,368	160	1	36,988	116,414
Ohio.....	432	314,693	347,341	1,974	6	314,736	691,724
Pennsylvania.....	463	586,652	651,369	1,466	32	408,048	1,292,807
Rhode Island.....	10	5,250	12,155	22	.....	6,960	21,966
South Carolina.....	29	105,986	47,806	106	2	29,904	104,777
Tennessee.....	154	151,345	129,270	411	6	101,052	336,222
Texas.....	13	14,050	9,920	34	1	10,740	29,622
Vermont.....	66	54,320	46,552	136	2	38,904	112,229
Virginia.....	156	165,334	159,063	492	12	109,832	304,224
Wisconsin.....	34	26,764	51,578	112	2	31,668	116,669
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total	3,515	3,969,379	4,427,006	12,506	360	3,154,006	9,325,671

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SALES.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama							
Arkansas							
California							
Connecticut	10	\$19,000	\$51,850	39		\$18,444	\$76,300
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana	9	3,000	3,300	6		3,960	9,500
Maine	94	45,450	142,296	112		46,092	251,710
Maryland	94	21,680	191,596	111	1	38,040	211,530
Massachusetts	71	74,650	261,259	298		135,108	514,862
Michigan	2	5,000	5,000	6		2,040	9,000
Mississippi							
Missouri	3	1,900	4,050	12		6,480	14,200
New Hampshire	2	2,500	14,895	6		2,760	18,500
New Jersey	1	700	2,695	1		216	4,741
New York	90	57,600	101,648	137	4	57,360	224,200
North Carolina							
Ohio	5	4,100	6,927	10	5	4,176	13,760
Pennsylvania	10	27,100	119,695	64		25,140	262,000
Rhode Island	3	1,900	2,490	8		2,724	6,650
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia	5	6,300	16,583	25		5,464	28,550
Wisconsin	1	2,500	6,000	3		1,620	9,000
Minnesota							
New Mexico							
Oregon							
Utah							
Total	183	266,380	880,414	838	10	342,644	1,654,56

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SALT AND SALT REFINING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	1	\$4,000	\$4,000	1	1	\$504	\$5,600
Delaware.....							
District of Columbia.....							
Florida.....	1	19,000		6	2	1,798	6,000
Georgia.....							
Illinois.....	1	2,500	2,000	3		720	6,000
Indiana.....							
Iowa.....							
Kentucky.....	12	121,450	17,050	153	9	17,448	57,625
Louisiana.....							
Maine.....	3	3,100	7,225	4		1,080	2,700
Maryland.....							
Massachusetts.....	9	40,400	60,000	28	7	8,196	23,650
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....							
New York.....	192	819,950	631,955	873		299,376	288,315
North Carolina.....							
Ohio.....	32	188,750	35,633	167		42,036	122,220
Pennsylvania.....	47	168,360	57,183	219		55,020	161,796
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....	2	3,450	1,750	15	1	2,352	6,100
Vermont.....							
Virginia.....	40	1,269,900	234,623	1,230	67	324,900	708,466
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	340	2,640,860	1,051,419	2,699	87	753,360	2,177,945

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SASH AND BLINDS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	1	\$3,000	\$2,100	10	.....	\$3,600	\$6,589
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	30	146,050	77,577	217	.....	82,908	198,300
Delaware .....	.....	.....	.....	.....	.....	.....	.....
District of Columbia ..	.....	.....	.....	.....	.....	.....	.....
Florida	1	6,000	5,000	36	.....	11,760	24,000
Georgia	6	16,750	9,150	55	.....	17,640	40,800
Illinois	14	22,900	23,060	80	.....	24,144	68,550
Indiana	5	6,800	840	15	.....	4,452	12,050
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	2	3,000	2,200	6	4	2,904	11,000
Louisiana	1	3,000	4,375	15	.....	11,700	15,750
Maine	30	34,975	28,530	145	.....	39,094	82,222
Maryland .....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	60	148,800	127,385	227	.....	116,196	316,096
Michigan	14	21,000	5,555	50	.....	14,640	25,520
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	5	18,200	24,200	47	1	22,320	53,700
New Hampshire	35	64,450	67,148	212	.....	71,964	186,400
New Jersey ..	20	37,500	47,857	150	.....	46,992	117,325
New York	58	130,700	86,518	300	.....	91,656	244,898
North Carolina .....	.....	.....	.....	.....	.....	.....	.....
Ohio	45	161,410	111,199	269	4	97,956	289,227
Pennsylvania	59	166,770	175,356	318	40	111,948	307,428
Rhode Island	5	14,200	13,820	25	.....	7,684	27,700
South Carolina	2	2,000	7,650	14	.....	4,800	17,000
Tennessee	4	3,400	4,116	11	.....	3,120	8,250
Texas	3	4,100	11,000	14	.....	6,972	27,000
Vermont	16	16,550	8,636	50	.....	13,752	28,858
Virginia	4	12,400	6,077	25	.....	9,096	20,500
Wisconsin	13	16,100	10,418	67	.....	24,096	47,130
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	433	1,066,355	859,827	2,448	49	840,924	2,277,061

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SCALES AND BEAMS—WEIGHERS.				
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.
Alabama .....	.....	.....	.....	.....	.....	.....
Arkansas .....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....
Connecticut	1	\$2,000	\$5,000	6	.....	\$2,160
Delaware .....	.....	.....	.....	.....	.....	.....
District of Columbia .....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....
Illinois .....	.....	.....	.....	.....	.....	.....
Indiana .....	.....	.....	.....	.....	.....	.....
Iowa .....	.....	.....	.....	.....	.....	.....
Kentucky	1	2,500	2,500	11	.....	4,200
Louisiana .....	.....	.....	.....	.....	.....	.....
Maine .....	.....	.....	.....	.....	.....	.....
Maryland .....	.....	.....	.....	.....	.....	.....
Massachusetts	2	6,000	10,000	17	.....	7,608
Michigan	1	1,000	1,500	6	.....	1,440
Mississippi .....	.....	.....	.....	.....	.....	.....
Missouri	2	12,900	8,236	23	.....	8,784
New Hampshire .....	.....	.....	.....	.....	.....	.....
New Jersey	1	200	260	1	.....	360
New York .....	.....	.....	.....	.....	.....	.....
North Carolina .....	.....	.....	.....	.....	.....	.....
Ohio	6	14,900	21,219	33	.....	13,800
Pennsylvania	5	20,000	17,558	41	.....	16,740
Rhode Island .....	.....	.....	.....	.....	.....	.....
South Carolina .....	.....	.....	.....	.....	.....	.....
Tennessee .....	.....	.....	.....	.....	.....	.....
Texas .....	.....	.....	.....	.....	.....	.....
Vermont	1	100,000	57,720	225	.....	81,000
Virginia	1	20,000	4,530	35	.....	7,900
Wisconsin	1	4,500	1,750	4	.....	1,226
Minnesota .....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....
Total	22	184,000	130,267	402	.....	144,588

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SILVERSMITHS, JEWELLERS, AND WATCHMAKERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	3	\$1,600	\$800	4		\$1,800	\$4,550
Arkansas							
California							
Connecticut	27	140,300	219,022	945	12	92,808	366,050
Delaware							
District of Columbia ..	10	20,950	11,130	14		5,448	22,872
Florida							
Georgia	1	400	150	1		360	1,100
Illinois	14	37,710	11,410	23		7,140	20,985
Indiana	2	2,300	600	2		720	1,500
Iowa	1	800	500	1		360	900
Kentucky	14	31,250	32,415	39	1	14,928	57,100
Louisiana	19	28,000	28,000	24		15,120	60,800
Maine	3	3,100	3,115	4	1	2,904	5,700
Maryland	31	55,400	23,611	113	7	50,724	236,175
Massachusetts	68	316,700	541,492	642	115	262,260	1,063,478
Michigan	1	2,000	2,000	6	2	2,640	10,000
Mississippi	1	400	500	1		600	1,200
Missouri	11	15,310	7,980	14		5,292	18,700
New Hampshire	2	6,500	0,100	4		1,560	9,200
New Jersey	29	586,300	584,143	669	49	263,028	1,153,179
New York	153	1,337,860	1,683,302	1,527	68	701,148	3,464,138
North Carolina	2	1,300	800	3		1,080	3,360
Ohio	10	13,500	57,615	40	4	21,072	86,600
Pennsylvania	102	547,440	815,662	722	53	300,768	1,457,194
Rhode Island	38	622,950	591,778	675	77	338,172	1,241,775
South Carolina	5	3,800	1,400	9		3,204	7,364
Tennessee	9	11,400	5,560	25		15,960	25,144
Texas							
Vermont	5	10,000	14,477	12		4,128	22,340
Virginia	19	22,200	19,317	30		10,200	35,077
Wisconsin	10	8,700	7,740	24		7,872	18,414
Minnesota							
New Mexico							
Oregon							
Utah							
Total	583	3,628,170	4,920,619	4,873	369	2,131,226	9,401,765

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SHOES.					Value of product.
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	
Alabama							
Arkansas							
California							
Connecticut	5	\$5,200	\$3,675	11		\$2,856	\$14.75
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	97	10,965	18,550	76		22,560	23.14
Indiana	18	6,550	5,272	33		6,252	18.46
Iowa							
Kentucky							
Louisiana	6	4,360	4,760	41		8,582	15.79
Maine	260	229,595	263,204	755		205,776	41.62
Maryland							
Massachusetts							
Michigan							
Mississippi	2	600	600	7		1,392	1.20
Missouri							
New Hampshire	19	2,900	5,750	20		5,194	12.22
New Jersey							
New York							
North Carolina	71	188,195	37,722	748		101,472	26.22
Ohio	30	23,785	16,355	85		18,648	21.80
Pennsylvania	38	22,825	13,583	71		14,436	41.62
Rhode Island							
South Carolina	2			2		940	1.72
Tennessee							
Texas							
Vermont	4	1,600	1,925	9		2,208	7.50
Virginia	8	242,040	21,660	223		21,636	22.26
Wisconsin	10	10,325	13,806	46		14,136	21.67
Minnesota							
New Mexico							
Oregon							
Utah							
Total	520	823,940	406,232	2,127		425,326	28.67

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SHIP BUILDING AND BOATS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	42	\$389,400	\$305,600	787		\$325,944	\$522,410
Delaware	7	70,400	42,485	135		54,516	194,050
District of Columbia ..	9	7,700	12,000	33		7,800	25,000
Florida	4	10,900		40		16,478	17,700
Georgia	2	5,500	1,697	11		4,776	8,000
Illinois	1	100	250	4		1,930	2,500
Indiana	18	81,950	57,597	157		55,152	153,263
Iowa							
Kentucky	7	25,500	81,400	193		63,360	182,900
Louisiana	7	167,500	107,361	199		100,620	251,701
Maine	172	887,876	981,750	2,054		938,772	2,145,380
Maryland	68	210,620	344,583	929		413,160	1,061,250
Massachusetts	140	655,900	1,822,690	1,835		1,028,904	2,711,885
Michigan	1	200	80	3		900	1,210
Mississippi							
Missouri	4	126,150	42,625	68		61,344	183,750
New Hampshire	5	22,800	574,855	349		137,160	739,360
New Jersey	27	91,310	65,497	155		65,798	171,900
New York	125	1,513,000	2,625,162	3,478		1,745,160	6,150,185
North Carolina	8	77,950	43,900	144		37,140	98,000
Ohio	17	155,900	74,018	222		106,308	209,560
Pennsylvania	192	478,253	574,963	1,507		585,636	1,494,909
Rhode Island	6	41,400	43,022	115		51,180	117,750
South Carolina							
Tennessee	1	500	2,800	9		4,320	5,400
Texas	3	3,000	2,720	8		4,320	14,600
Vermont	1	150,000	60,000	100	4	36,720	190,000
Virginia	32	102,700	56,966	239	2	75,192	152,020
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	892	5,182,309	7,266,401	12,623	6	5,922,576	16,595,683

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	STARCH.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut							
Delaware							
District of Columbia ..							
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky	1	\$16,000	\$15,000	8		\$3,900	\$9.44
Louisiana							
Maine	10	23,370	6,000	19		4,032	1.15
Maryland							
Massachusetts	7	42,000	106,520	46		16,680	12.20
Michigan	1	7,000	600	2		600	1.60
Mississippi							
Missouri	3	17,800	52,450	14		3,720	5.40
New Hampshire	26	48,580	42,331	40		9,940	62.02
New Jersey	1	40,000	67,500	90		21,600	12.40
New York	22	256,800	287,655	254	8	76,176	451.25
North Carolina							
Ohio	4	50,000	42,626	44		13,080	57.12
Pennsylvania	8	84,600	93,962	56		15,276	12.50
Rhode Island	1	1,400	12,000	3		1,440	2.26
South Carolina							
Tennessee							
Texas							
Vermont	62	105,125	93,216	110		27,480	120.70
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	146	692,675	790,450	686	8	193,224	1,216.20

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	STONE AND MARBLE QUARRIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	7	\$23,350	\$8,754	44	2	\$8,844	\$32,250
Arkansas	2	1,000	900	3		540	1,800
California							
Connecticut	56	409,375	51,056	1,074		329,148	519,150
Delaware	4	8,900	3,100	19		6,000	14,200
District of Columbia ..	5	3,500	29,125	35		16,620	52,975
Florida							
Georgia	5	8,900	3,350	49	2	9,046	25,199
Illinois	24	32,310	37,477	95		28,704	112,132
Indiana	22	27,000	21,340	84		24,324	66,210
Iowa	1	6,000		20		3,600	4,000
Kentucky	19	28,325	26,119	112		37,788	103,200
Louisiana	1	1,200	1,800	4		2,400	7,000
Maine	62	141,144	40,719	429		179,544	327,401
Maryland	35	145,050	112,425	348		131,520	327,714
Massachusetts	129	605,150	246,277	1,639		665,568	1,200,031
Michigan	12	10,000	12,010	34		11,640	35,835
Mississippi	2	6,500	7,500	7		3,600	15,500
Missouri	33	63,285	81,003	357		117,720	219,895
New Hampshire	28	22,190	23,388	141		45,276	82,813
New Jersey	36	84,500	40,114	270		78,744	164,380
New York	273	852,320	840,975	2,391		849,456	2,205,255
North Carolina	2	2,075	2,000	5		1,980	4,570
Ohio	113	212,358	131,134	647		194,232	508,090
Pennsylvania	156	838,425	537,703	1,333		432,360	1,359,303
Rhode Island	8	31,750	21,030	22		32,508	65,264
South Carolina	2	50	50	5		2,400	3,040
Tennessee	13	25,450	10,150	50		18,288	36,314
Texas							
Vermont	68	371,725	142,094	456		148,500	574,800
Virginia	14	45,150	30,268	134	1	39,972	85,610
Wisconsin	12	2,900	4,599	39		10,872	24,143
Minnesota							
New Mexico							
Oregon							
Utah							
Total	1,144	4,032,122	2,475,760	2,208		3,431,194	8,120,115

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	STOVES AND RANGES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	1	\$4,000	\$3,000	3		\$1,080	\$5,000
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois							
Indiana	1	800	790	2		480	1,600
Iowa							
Kentucky	5	183,000	112,975	262		86,916	312,316
Louisiana	1	50,000	23,400	20		13,900	54,000
Maine	5	5,000	5,375	11		4,210	12,000
Maryland	19	271,500	320,875	413		147,108	662,000
Massachusetts	37	227,200	563,575	427		193,508	872,450
Michigan							
Mississippi							
Missouri	2	75,150	34,060	103		39,000	116,900
New Hampshire							
New Jersey							
New York	51	1,305,600	1,025,252	1,041		661,020	2,222,200
North Carolina							
Ohio	8	123,700	181,150	204		105,780	413,700
Pennsylvania	97	832,325	562,506	972		341,568	1,270,122
Rhode Island	2	12,000	16,100	24		7,440	2,000
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin	1	18,000	14,955	25		14,976	62,700
Minnesota							
New Mexico							
Oregon							
Utah							
Total	230	3,179,475	2,913,943	4,227		1,617,274	6,124,700

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SUGAR REFINERIES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia..							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....	2	\$70,000	\$284,000	75	2	\$35,400	\$425,000
Maine.....	1	165,000	307,500	75		22,500	330,000
Maryland.....	2	62,000	184,040	19		6,720	303,500
Massachusetts.....	4	620,000	1,140,875	203	4	86,580	1,315,700
Michigan.....							
Mississippi.....							
Missouri.....	3	177,000	913,370	214		70,800	1,213,600
New Hampshire.....							
New Jersey.....							
New York.....	5	880,080	3,788,400	745	6	\$77,104	5,020,000
North Carolina.....							
Ohio.....							
Pennsylvania.....	5	615,000	834,000	278		92,544	1,158,000
Rhode Island.....							
South Carolina.....	1	80,000	110,500	35		12,600	123,000
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	23	2,662,000	7,662,685	1,644	12	604,248	9,828,800

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	SURGICAL INSTRUMENTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	3	\$25,000	\$13,185	43	14	\$23,340	\$58,650
Delaware.....							
District of Columbia...							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	1	700	900	3		1,960	2,000
Louisiana.....	1	5,000	1,450	6		4,900	7,600
Maine.....							
Maryland.....	2	3,000	1,045	8		2,580	6,000
Massachusetts.....	7	14,900	16,936	98	38	17,940	48,100
Michigan.....							
Mississippi.....							
Missouri.....							
New Hampshire.....							
New Jersey.....	1	3,600	4,801	10		3,900	11,000
New York.....	3	3,400	490	6	1	2,640	2,250
North Carolina.....							
Ohio.....	2	1,850	165	4		1,500	3,500
Pennsylvania.....	16	43,500	39,515	77	43	32,388	107,300
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	1	1,900	3,900	4	15	3,995	8,000
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	37	101,450	60,987	189	111	90,044	255,400

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TANNERS AND CURRIERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	146	\$907,800	\$160,294	477	4	\$100,752	\$344,445
Arkansas	51	42,100	35,215	110	.....	21,768	78,894
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	194	386,610	483,443	487	.....	126,516	775,325
Delaware	17	109,350	141,320	119	.....	35,676	213,742
District of Columbia...	5	32,500	33,846	16	.....	5,328	56,000
Florida	4	9,400	4,300	12	.....	2,268	2,200
Georgia	146	985,775	188,739	454	1	101,664	403,430
Illinois	89	184,888	119,305	243	.....	54,224	337,384
Indiana ..	366	515,222	393,396	857	2	189,516	750,801
Iowa	14	20,350	10,525	28	.....	6,516	24,550
Kentucky ...	274	772,249	547,888	890	3	174,840	1,106,533
Louisiana	19	49,600	31,465	66	6	20,364	78,085
Maine	230	753,447	950,545	825	3	231,468	1,701,299
Maryland	139	713,200	941,167	559	.....	132,528	1,426,734
Massachusetts	364	1,842,720	3,908,346	2,184	32	798,456	5,672,550
Michigan	61	255,450	219,715	281	2	65,872	401,730
Mississippi	93	159,235	107,418	271	3	60,960	241,638
Missouri	146	216,801	182,822	400	6	93,456	366,361
New Hampshire	169	454,475	561,703	564	14	161,952	944,554
New Jersey	137	739,057	874,664	549	.....	156,852	1,269,928
New York	949	5,035,143	6,065,691	4,914	81	1,240,740	2,802,670
North Carolina	153	251,375	186,583	368	1	61,476	363,647
Ohio	715	1,355,412	1,154,567	1,851	.....	443,964	2,110,968
Pennsylvania	1,103	4,210,918	3,901,225	3,271	2	753,408	6,296,363
Rhode Island	14	85,000	86,108	53	1	16,360	133,050
South Carolina	91	182,580	123,486	271	.....	42,912	228,399
Tennessee	384	496,270	418,847	911	6	173,724	804,631
Texas	22	33,850	18,264	62	1	12,340	52,600
Vermont	156	411,150	390,149	494	.....	110,856	640,665
Virginia	344	697,983	525,276	912	6	166,860	227,877
Wisconsin	9	79,550	96,843	78	.....	21,768	181,010
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico	1	500	120	4	.....	260	1,260
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	6,598	20,602,945	22,865,253	22,451	124	5,606,904	37,702,333

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TIN AND SHEET-IRON WORKERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	18	\$22,675	\$25,562	52	.....	\$19,224	\$28.79
Arkansas	2	2,500	3,000	4	.....	1,440	6.50
California	2	3,700	2,450	3	.....	7,900	11.00
Connecticut	81	242,100	248,536	429	14	147,924	42.05
Delaware	7	12,100	14,080	36	.....	12,306	22.70
District of Columbia ..	14	14,275	21,930	54	.....	19,236	24.29
Florida	2	2,500	2,680	5	.....	1,380	4.33
Georgia	17	25,400	50,025	63	.....	23,604	12.22
Illinois	82	113,825	134,515	224	.....	70,944	22.00
Indiana	86	144,250	136,380	236	.....	69,980	24.32
Iowa	16	37,650	31,349	54	.....	17,160	21.20
Kentucky	61	102,600	86,506	170	.....	53,016	22.20
Louisiana	26	56,400	74,080	115	.....	73,500	22.12
Maine	80	118,050	112,026	252	.....	76,186	22.22
Maryland	67	91,025	112,167	246	9	78,432	22.71
Massachusetts	174	353,605	341,000	679	5	226,632	22.20
Michigan	45	71,600	74,536	123	.....	32,928	12.25
Mississippi	17	33,250	20,810	43	.....	16,464	5.23
Missouri	66	199,690	226,634	258	1	23,660	24.23
New Hampshire	55	113,650	198,248	200	4	66,394	22.20
New Jersey	74	207,375	192,776	204	.....	91,932	21.22
New York	476	204,440	222,752	1,440	2	453,744	1,022.76
North Carolina	15	12,100	16,268	32	.....	6,626	2.06
Ohio	238	331,523	371,210	672	.....	202,344	22.21
Pennsylvania	343	460,427	424,516	236	.....	258,132	22.22
Rhode Island	20	42,900	42,974	69	.....	22,680	12.00
South Carolina	21	26,475	31,079	46	.....	16,440	12.20
Tennessee	28	24,325	65,517	121	.....	41,940	22.20
Texas	10	12,600	22,320	31	.....	16,980	22.20
Vermont	40	20,100	68,269	112	.....	33,384	12.22
Virginia	48	24,970	121,847	209	.....	58,368	22.22
Wisconsin	47	82,237	25,146	133	.....	44,616	22.22
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	2,280	4,122,587	4,325,362	7,265	26	2,363,100	2,222.22

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TOBACCONISTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	3	\$5,500	\$2,700	12	3	\$2,940	\$8,250
Arkansas							
California							
Connecticut	39	145,700	115,741	206	143	93,504	275,602
Delaware	8	13,800	18,550	30		6,636	34,300
District of Columbia ..	6	3,550	4,675	11		3,120	10,520
Florida	1	300	500	2		480	1,000
Georgia	7	10,975	12,512	32		8,664	30,500
Illinois	17	10,300	20,460	57		17,908	62,780
Indiana	17	15,975	18,151	73	1	14,316	41,522
Iowa							
Kentucky	75	512,000	627,868	885	62	172,100	1,181,354
Louisiana	39	22,350	22,120	203		52,740	124,900
Maine	3	4,700	13,379	17	26	2,468	34,350
Maryland	125	126,260	210,542	502	6	153,348	608,716
Massachusetts	66	118,750	186,314	261	405	130,022	411,213
Michigan	5	36,800	35,700	91	18	20,220	87,200
Mississippi							
Missouri	101	483,602	533,610	748	179	135,012	823,222
New Hampshire	6	74,000	22,423	52	18	2,600	51,277
New Jersey	32	87,430	136,117	267	13	62,136	261,368
New York	164	467,736	684,225	1,322	131	361,022	1,422,267
North Carolina	81	167,440	163,322	422	122	47,726	308,630
Ohio	70	62,746	144,626	325	16	20,588	334,244
Pennsylvania	302	520,760	502,161	1,304	178	323,676	1,163,612
Rhode Island	7	10,250	15,575	30	14	12,264	33,212
South Carolina							
Tennessee	24	526,050	522,426	454	72	65,264	810,300
Texas	4	800	1,800	5		1,740	5,000
Vermont	1	2,000	3,000	7	1	2,426	12,000
Virginia	220	1,412,471	2,017,204	4,202	477	527,240	5,157,652
Wisconsin	6	8,650	8,652	43		8,828	30,705
Minnesota							
New Mexico							
Oregon							
Utah							
Total	1,418	5,024,225	7,341,726	12,261	1,275	2,422,226	12,421,147

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TRUNKS AND CARPET BAGS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$3,000	\$3,000	7	.....	\$3,360	\$21,000
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	3	9,900	62,210	24	106	90,628	116,150
Delaware.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia ..	.....	.....	.....	.....	.....	.....	.....
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....	.....	.....	.....
Illinois.....	1	1,000	1,000	4	.....	960	5,400
Indiana.....	.....	.....	.....	.....	.....	.....	.....
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	2	5,900	12,500	18	.....	7,344	18,360
Louisiana.....	2	2,900	6,750	13	.....	5,880	32,400
Maine.....	9	5,000	9,275	22	.....	5,652	17,624
Maryland.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	22	35,100	95,852	106	7	36,316	162,320
Michigan.....	.....	.....	.....	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	7	7,080	24,460	42	.....	16,308	77,904
New Hampshire.....	2	1,800	625	3	.....	1,900	2,625
New Jersey.....	7	84,000	163,037	321	70	99,216	337,040
New York.....	27	99,000	147,483	177	50	63,288	260,116
North Carolina.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	4	18,600	118,900	103	11	40,536	126,064
Pennsylvania.....	28	83,000	117,724	211	20	81,372	266,152
Rhode Island.....	1	2,500	3,000	5	.....	2,100	7,500
South Carolina.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....	.....	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	116	356,660	765,816	1,056	264	366,160	1,552,224

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TURNERS, WOOD.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	16	\$43,650	\$16,015	103	19	\$33,780	\$62,901
Delaware	1	900	32	1		268	550
District of Columbia	3	3,000	2,325	5		1,692	4,700
Florida							
Georgia							
Illinois	9	4,950	2,739	90		6,144	13,535
Indiana	6	3,115	1,835	10		2,180	6,867
Iowa							
Kentucky	1	900	50	2		360	600
Louisiana	3	2,400	3,900	10		6,480	13,900
Maine	3	3,150	698	6		1,690	2,521
Maryland	10	10,225	25,666	24		8,138	51,450
Massachusetts	70	123,650	59,945	278	4	20,948	124,372
Michigan	8	2,760	4,890	19		5,568	16,200
Mississippi							
Missouri	7	2,830	4,890	10		3,000	13,380
New Hampshire	25	68,350	18,276	173		42,324	99,743
New Jersey	39	62,000	49,279	195		54,228	208,700
New York	127	154,310	138,091	394	4	124,692	301,273
North Carolina							
Ohio	29	37,600	15,660	69		18,900	58,424
Pennsylvania	48	65,475	37,194	189		54,516	143,713
Rhode Island	10	13,850	7,965	46		15,790	31,380
South Carolina	2	300	25	5		600	1,100
Tennessee							
Texas							
Vermont	15	18,700	7,723	49		13,236	34,420
Virginia	6	8,600	8,541	15		4,368	17,620
Wisconsin	2	1,100	1,176	9		3,240	6,600
Minnesota							
New Mexico							
Oregon							
Utah							
Total	440	663,615	407,043	1,624	27	493,090	1,374,449

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TURPENTINE.					
		Capital.	Cost of raw material	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	4	\$12,300	\$6,180	33		\$7,776	\$17,599
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....	5	98,000	9,600	75	7	12,408	29,671
Georgia.....	14	109,950	25,000	163	39	24,852	55,068
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....							
Louisiana.....	1	1,500	190	3		540	1,739
Maine.....							
Maryland.....							
Massachusetts.....	1	10,000	17,500	3		1,236	19,999
Michigan.....							
Mississippi.....	5	19,000	4,025	27	6	5,052	19,999
Missouri.....							
New Hampshire.....							
New Jersey.....							
New York.....							
North Carolina.....	785	1,417,532	1,995,448	2,642	16	372,036	2,475,222
Ohio.....							
Pennsylvania.....							
Rhode Island.....							
South Carolina.....	40	65,400	126,175	220		23,100	225,539
Tennessee.....	1	10	900	3		288	622
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	856	1,663,692	1,484,318	3,369	68	447,348	2,655,457

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	TYPE AND STEREOTYPE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	9	\$8,000	\$9,000	13	7	\$4,939	\$16,000
Delaware							
District of Columbia							
Florida							
Georgia	1	2,500	360	2		600	1,200
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana							
Maine	1	4,000	2,065	20		4,800	10,000
Maryland	1	15,000	2,675	31		12,000	25,000
Massachusetts	8	106,300	33,627	123	46	53,532	142,000
Michigan							
Mississippi							
Missouri	1	15,800	3,000	10	10	5,760	15,000
New Hampshire							
New Jersey	1	10,000	36,200	6		2,160	44,000
New York	17	156,500	111,100	266	123	114,480	335,000
North Carolina							
Ohio	4	30,900	26,220	74	30	22,940	67,000
Pennsylvania	6	165,000	72,455	210	8	53,016	258,000
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	42	513,700	298,922	775	224	275,220	913,200

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	UMBRELLAS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	3	\$3,900	\$4,038	6	4	\$2,194	\$2,700
Delaware							
District of Columbia...	2	800	925	3	1	1,244	2,600
Florida							
Georgia							
Illinois							
Indiana							
Iowa							
Kentucky							
Louisiana	3	1,500	2,500	6	3	3,000	7,300
Maine							
Maryland	7	9,300	23,948	10	41	9,190	48,520
Massachusetts	7	30,600	60,850	22	49	15,768	100,530
Michigan							
Mississippi							
Missouri	1	4,000	900	3	3	1,900	5,000
New Hampshire							
New Jersey	2	4,500	10,063	6	8	3,072	17,000
New York	27	259,700	654,099	339	1,049	196,476	1,326,330
North Carolina							
Ohio	9	3,000	2,150	6	4	2,592	5,700
Pennsylvania	26	344,400	640,194	413	600	198,852	923,730
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia							
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	80	761,700	1,399,607	814	1,709	433,548	2,255,000

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	UPHOLSTERERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	4	\$4,300	\$2,800	11	4	\$3,108	\$7,500
Delaware.....							
District of Columbia..	6	6,400	13,573	14	11	7,116	23,990
Florida.....							
Georgia.....							
Illinois.....	2	7,000	4,250	6		1,560	12,000
Indiana.....							
Iowa.....							
Kentucky.....	7	13,550	17,783	19	19	9,192	35,290
Louisiana.....	10	5,300	31,608	32	3	11,748	51,690
Maine.....	3	38,000	34,500	76	15	34,680	111,000
Maryland.....	14	24,200	36,220	50	26	18,684	78,180
Massachusetts.....	17	53,900	121,968	74	44	32,944	125,268
Michigan.....							
Mississippi.....							
Missouri.....	9	29,060	63,625	43	70	28,128	126,800
New Hampshire.....	1	1,000	2,250	1	1	660	3,000
New Jersey.....	1	800	4,182	3	2	1,056	6,000
New York.....	28	188,050	302,310	942	318	108,228	526,700
North Carolina.....							
Ohio.....	12	25,050	61,953	46	45	16,968	107,200
Pennsylvania.....	20	141,525	211,805	154	140	80,632	459,248
Rhode Island.....							
South Carolina.....	1	200	290	1		240	785
Tennessee.....	4	2,800	6,120	9		2,580	4,070
Texas.....	1	200	450	2		1,200	2,000
Vermont.....							
Virginia.....	6	24,400	18,106	21	10	7,356	37,224
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	155	565,635	963,961	804	708	375,580	1,720,693

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WEAVERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama .....	.....	.....	.....	.....	.....	.....	.....
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut .....	.....	.....	.....	.....	.....	.....	.....
Delaware .....	.....	.....	.....	.....	.....	.....	.....
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....	.....
Illinois .....	.....	.....	.....	.....	.....	.....	.....
Indiana	9	\$7,850	\$2,785	19	3	\$3,744	\$11,300
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	3	1,250	1,000	6	1	1,350	4,000
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine .....	.....	.....	.....	.....	.....	.....	.....
Maryland .....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	9	28,000	19,035	20	73	19,368	32,300
Michigan	1	200	600	1	.....	300	1,000
Mississippi .....	.....	.....	.....	.....	.....	.....	.....
Missouri	1	800	800	2	.....	600	2,000
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey	10	7,150	16,616	46	8	10,468	31,300
New York	9	20,450	17,055	52	15	11,448	35,000
North Carolina .....	.....	.....	.....	.....	.....	.....	.....
Ohio	19	6,925	10,908	29	1	6,792	24,100
Pennsylvania	20	51,765	63,134	187	53	46,690	161,700
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina .....	.....	.....	.....	.....	.....	.....	.....
Tennessee	1	500	670	3	1	804	1,600
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont .....	.....	.....	.....	.....	.....	.....	.....
Virginia	1	800	1,637	3	.....	790	2,000
Wisconsin .....	.....	.....	.....	.....	.....	.....	.....
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	153	128,220	134,480	377	155	102,904	316,100

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WHEELWRIGHTS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	58	\$49,500	\$26,050	160	9	\$47,964	\$94,565
Arkansas.....	13	6,210	7,670	45	...	8,160	26,020
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	76	75,985	47,413	200	.....	63,792	132,014
Delaware.....	30	12,400	8,545	79	.....	17,484	29,126
District of Columbia..	15	7,920	11,480	28	.....	8,748	31,280
Florida.....	3	1,750	1,030	7	.....	2,220	5,500
Georgia.....	64	37,825	14,172	161	1	41,376	75,014
Illinois.....	306	228,885	125,421	701	.....	208,222	472,152
Indiana.....	134	62,760	28,161	227	.....	74,508	144,371
Iowa.....	15	6,300	3,965	34	.....	11,520	19,606
Kentucky.....	119	67,475	44,226	228	1	79,164	122,701
Louisiana.....	23	18,700	15,635	71	.....	26,976	23,270
Maine.....	24	7,635	5,530	39	.....	12,216	22,540
Maryland.....	51	15,025	20,426	120	.....	22,664	67,479
Massachusetts.....	225	207,925	109,060	562	.....	121,580	320,004
Michigan.....	87	69,375	38,307	259	.....	73,584	151,370
Mississippi.....	40	14,120	8,125	77	.....	21,312	30,225
Missouri.....	7	3,550	5,255	18	.....	4,440	14,100
New Hampshire.....	84	60,965	35,900	223	.....	69,612	126,235
New Jersey.....	243	220,350	125,244	650	.....	162,152	405,261
New York.....	1,204	1,012,830	554,607	3,541	2	267,612	2,046,576
North Carolina.....	25	12,710	6,329	67	.....	14,522	26,311
Ohio.....	261	128,413	122,297	264	1	227,912	505,804
Pennsylvania.....	544	455,418	274,166	1,443	.....	369,564	842,776
Rhode Island.....	20	12,250	11,222	62	.....	20,460	42,345
South Carolina.....	54	26,165	17,615	122	.....	26,226	50,431
Tennessee.....	122	63,530	35,162	203	.....	71,424	152,912
Texas.....	27	10,220	10,015	56	.....	24,060	22,600
Vermont.....	100	26,020	24,211	277	.....	77,556	161,226
Virginia.....	122	62,970	52,227	264	.....	20,276	200,162
Wisconsin.....	74	75,420	57,065	221	.....	84,226	205,522
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	4,226	3,146,211	1,626,551	11,522	7	3,157,544	6,227,451

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WIGS AND CURLS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	1	\$800	\$800	1	3	\$1,800	\$3,000
Delaware.....							
District of Columbia...							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	2	3,800	4,800	2	4	1,536	2,928
Louisiana.....							
Maine.....							
Maryland.....	2	5,800	4,450	1	11	2,064	9,000
Massachusetts.....	7	6,300	10,600	8	17	5,532	22,320
Michigan.....	1	100	300	2		200	1,200
Mississippi.....							
Missouri.....	3	1,700	1,650	6		3,060	3,300
New Hampshire.....							
New Jersey.....							
New York.....							
North Carolina.....							
Ohio.....	1	100	150	2		840	2,000
Pennsylvania.....	7	14,000	12,063	13	33	9,648	21,570
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....	1	1,500	1,550	5		540	2,300
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	25	33,900	36,363	40	68	25,680	22,270

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WHIPS AND CANES.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....	1	\$500	\$575	2	3	\$1,460	\$1,350
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....	1	70	40	1		240	500
Indiana.....							
Iowa.....	1	150	50	1		240	750
Kentucky.....							
Louisiana.....							
Maine.....	2	3,050	2,060	7	4	4,188	7,625
Maryland.....	3	10,650	16,660	32	4	7,416	27,850
Massachusetts.....	23	79,775	87,360	174	373	101,568	248,700
Michigan.....							
Mississippi.....							
Missouri.....	3	1,050	2,250	9		1,560	7,600
New Hampshire.....	2	1,800	1,060	7	3	2,736	4,500
New Jersey.....							
New York.....	9	20,850	18,810	46	26	15,960	45,650
North Carolina.....							
Ohio.....	2	200	350	3		780	13,000
Pennsylvania.....	23	80,800	106,438	237	109	60,036	217,646
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	70	198,895	227,643	519	532	195,964	575,271

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WHITE LEAD.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	1	\$5,500	\$8,750	8		\$1,980	\$11.00
Louisiana.....							
Maine.....							
Maryland.....	1	25,000	94,000	20		7,900	6.00
Massachusetts.....	3	302,000	417,500	130		42,000	512.00
Michigan.....							
Mississippi.....							
Missouri.....	3	5,500	23,000	80		26,322	12.00
New Hampshire.....							
New Jersey.....	1	100,000	118,000	80		18,000	21.00
New York.....	26	2,051,800	2,056,540	889		318,680	1,522.00
North Carolina.....							
Ohio.....	8	121,000	294,640	114		33,000	38.00
Pennsylvania.....	8	514,000	527,842	187		64,356	78.00
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....							
Virginia.....							
Wisconsin.....							
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	51	3,194,800	3,541,072	1,568		512,306	5,982.00

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WHITE AND LOCK SMITHS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....							
Arkansas.....							
California.....							
Connecticut.....							
Delaware.....							
District of Columbia..							
Florida.....							
Georgia.....							
Illinois.....							
Indiana.....							
Iowa.....							
Kentucky.....	1	\$1,000	\$300	2		\$480	\$800
Louisiana.....	8	2,250	1,600	15		9,918	17,100
Maine.....							
Maryland.....	10	6,422	7,731	33		10,740	27,900
Massachusetts.....	16	25,900	40,560	92	2	37,344	100,352
Michigan.....							
Mississippi.....							
Missouri.....	8	4,010	2,825	15		4,128	15,330
New Hampshire.....							
New Jersey.....	6	15,650	15,313	51		17,088	46,639
New York.....							
North Carolina.....							
Ohio.....	9	4,100	4,860	43		12,000	26,266
Pennsylvania.....	20	79,600	34,776	145		44,700	110,450
Rhode Island.....							
South Carolina.....							
Tennessee.....							
Texas.....							
Vermont.....	1	2,000	365	5		1,800	2,500
Virginia.....	4	2,050	1,780	11		2,160	7,900
Wisconsin.....	1	100	25	1		360	600
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	82	144,082	110,155	413	2	140,712	355,137

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WIRE AND WIRE-WORKERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama							
Arkansas							
California							
Connecticut	3	\$30,600	\$23,545	4 only returned.		\$1,128	\$51.50
Delaware							
District of Columbia							
Florida							
Georgia							
Illinois	1	1,000	2,000	1		300	1.00
Indiana	2	575	300	2		600	1.15
Iowa							
Kentucky	1	58,000	50,000	50		15,600	65.70
Louisiana	2	500	550	4		1,920	4.00
Maine	4	10,250	8,384	14		5,052	15.30
Maryland	4	5,800	4,900	13		6,720	14.50
Massachusetts	16	173,300	156,170	143	11	57,420	265.30
Michigan							
Mississippi							
Missouri	5	10,400	5,800	18		7,360	13.50
New Hampshire	1	530	400	1	4	504	1.00
New Jersey	3	40,800	53,430	67	3	16,560	22.00
New York	18	103,150	149,230	205		52,968	220.30
North Carolina							
Ohio	5	10,550	20,350	17		5,580	31.30
Pennsylvania	15	74,800	42,739	21		27,926	65.64
Rhode Island							
South Carolina							
Tennessee							
Texas							
Vermont							
Virginia	3	12,500	16,750	28		8,400	21.00
Wisconsin							
Minnesota							
New Mexico							
Oregon							
Utah							
Total	83	537,735	534,548	658	18	206,126	1,433.46

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WOODEN WARE.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	1	\$6,000	\$2,000	8	.....	\$1,152	\$6,000
Arkansas.....	.....	.....	.....	.....	.....	.....	.....
California.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	12	22,350	8,303	60	11	16,358	26,875
Delaware.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia.....	.....	.....	.....	.....	.....	.....	.....
Florida.....	1	2,000	400	2	.....	720	2,400
Georgia.....	2	52,000	16,000	62	.....	17,904	36,000
Illinois.....	1	300	475	2	.....	600	1,625
Indiana.....	.....	.....	.....	.....	.....	.....	.....
Iowa.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....	.....	.....	.....
Louisiana.....	.....	.....	.....	.....	.....	.....	.....
Maine.....	7	7,250	2,470	22	2	6,300	11,717
Maryland.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	47	131,180	160,899	342	.....	99,348	331,878
Michigan.....	4	10,500	6,000	26	2	6,588	22,200
Mississippi.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	2	4,050	1,200	11	.....	3,480	6,500
New Hampshire.....	59	150,830	111,321	394	.....	102,408	302,320
New Jersey.....	.....	.....	.....	.....	.....	.....	.....
New York.....	18	52,625	50,052	136	5	38,064	122,115
North Carolina.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	10	34,250	51,850	133	.....	43,716	142,720
Pennsylvania.....	18	36,980	15,090	80	12	22,464	75,498
Rhode Island.....	.....	.....	.....	.....	.....	.....	.....
South Carolina.....	1	300	100	1	.....	240	650
Tennessee.....	.....	.....	.....	.....	.....	.....	.....
Texas.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	13	12,850	3,516	32	.....	7,992	18,810
Virginia.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	1	5,000	7,000	16	.....	4,800	17,500
Minnesota.....	.....	.....	.....	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	.....
Total.....	197	526,165	426,676	1,226	32	372,122	1,126,078

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WOOL CARDERS.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama	5	\$5,400	\$11,560	7	.....	\$1,320	\$14.25
Arkansas .....	.....	.....	.....	.....	.....	.....	.....
California .....	.....	.....	.....	.....	.....	.....	.....
Connecticut	11	13,850	37,530	23	4	6,156	51.97
Delaware	2	1,300	4,400	2	.....	480	5.00
District of Columbia .....	.....	.....	.....	.....	.....	.....	.....
Florida .....	.....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....	.....
Illinois	60	76,890	190,737	107	.....	23,700	17.05
Indiana	82	198,038	167,257	171	1	39,216	25.22
Iowa .....	.....	.....	.....	.....	.....	.....	.....
Kentucky	115	154,480	270,000	231	4	40,680	37.35
Louisiana .....	.....	.....	.....	.....	.....	.....	.....
Maine	42	26,885	75,510	46	2	11,252	5.96
Maryland .....	.....	.....	.....	.....	.....	.....	.....
Massachusetts .....	.....	.....	.....	.....	.....	.....	.....
Michigan .....	.....	.....	.....	.....	.....	.....	.....
Mississippi	7	7,400	2,190	9	2	2,256	11.52
Missouri	93	88,080	204,973	170	3	40,500	20.67
New Hampshire .....	.....	.....	.....	.....	.....	.....	.....
New Jersey .....	.....	.....	.....	.....	.....	.....	.....
New York .....	.....	.....	.....	.....	.....	.....	.....
North Carolina .....	.....	.....	.....	.....	.....	.....	.....
Ohio .....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania	62	81,000	112,123	102	1	20,968	15.00
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....
South Carolina	5	5,700	10,100	10	2	2,256	15.96
Tennessee	54	63,167	76,342	87	3	14,748	111.25
Texas .....	.....	.....	.....	.....	.....	.....	.....
Vermont .....	.....	.....	.....	.....	.....	.....	.....
Virginia	83	69,780	106,905	20	.....	17,244	15.94
Wisconsin	9	18,025	17,923	16	.....	4,226	2.77
Minnesota .....	.....	.....	.....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....	.....	.....	.....
Total	630	739,925	1,251,550	1,071	22	225,972	1,721.7

No. 1.—PRINCIPAL MANUFACTURES—Continued.

States and Territories.	Number of establishments.	WOOLENS, AND CARDING AND FULLING.					
		Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Alabama.....	3	\$3,600	\$4,480	11	3	\$2,160	\$7,470
Arkansas.....	2	6,500	6,500	7	5	1,800	8,800
California.....							
Connecticut.....	100	2,583,742	2,822,588	1,883	1,065	632,416	4,921,152
Delaware.....	5	136,500	198,985	113	86	30,420	244,510
District of Columbia.....							
Florida.....							
Georgia.....							
Illinois.....	19	151,300	118,502	118	55	40,872	200,845
Indiana.....	45	180,745	136,846	211	61	60,936	263,412
Iowa.....	27	42,550	75,315	60		13,992	112,454
Kentucky.....	16	102,800	99,580	117	12	22,992	152,554
Louisiana.....							
Maine.....	46	645,800	625,849	329	390	160,656	935,683
Maryland.....	41	257,100	175,918	264	106	73,728	312,240
Massachusetts.....	135	8,811,942	8,140,222	5,893	4,863	2,412,864	12,781,514
Michigan.....	40	141,500	109,322	146	58	46,368	192,042
Mississippi.....							
Missouri.....	1	20,000	16,000	15	10	6,540	56,000
New Hampshire.....	91	2,447,500	1,372,835	873	1,021	408,672	2,139,967
New Jersey.....	53	547,074	517,028	522	469	184,404	1,020,941
New York.....	440	4,481,930	4,778,584	3,974	3,185	1,400,892	7,605,774
North Carolina.....	14	85,250	47,970	52	39	11,916	71,470
Ohio.....	269	1,068,566	817,708	1,216	322	335,904	1,513,978
Pennsylvania.....	258	1,872,968	1,778,634	1,808	788	547,668	2,219,909
Rhode Island.....	52	1,097,300	1,689,884	1,040	634	406,308	2,504,700
South Carolina.....							
Tennessee.....							
Texas.....	2	2,000	14,500	6	4	2,400	22,000
Vermont.....	26	1,015,175	1,077,022	800	812	347,184	1,620,769
Virginia.....	41	324,700	379,218	376	188	107,472	690,602
Wisconsin.....	2	13,000	8,940	13		3,336	33,370
Minnesota.....							
New Mexico.....							
Oregon.....							
Utah.....							
Total.....	1,817	26,071,542	24,912,455	19,919	14,976	7,167,900	30,846,557

No. 2.

MISCELLANEOUS MANUFACTURES NOT HEREINBEFORE ENUMERATED.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
CALIFORNIA.							
Gold rockers.....	7	\$6,200	\$75,950	30	.....	\$14,076	\$222,499
CONNECTICUT.							
Bobbins and spools.....	2	8,000	1,700	8	1	4,036	6,000
Clock cases.....	5	12,000	12,000	49	4	16,200	26,000
Clocks.....	17	478,800	426,882	796	16	261,816	1,763,200
Clock springs.....	6	22,300	34,675	62	14	23,336	72,000
Coach laces.....	2	13,000	8,168	96	10	12,264	25,656
Fringe and gimp.....	2	17,000	24,200	17	70	18,504	57,300
Gum and varnish.....	3	1,350	10,500	4	.....	1,508	15,375
Oakum pickers.....	5	26,500	26,928	49	.....	13,020	26,500
Patent leather.....	2	18,000	21,610	27	.....	12,720	30,000
Pins.....	4	164,800	137,800	58	207	52,104	207,330
Percussion caps.....	2	5,000	15,350	9	3	2,680	30,000
Pocket books.....	2	5,200	7,500	4	26	5,436	17,000
Printers, lithographers and copper-plate.....	2	17,000	12,000	20	25	13,020	37,000
Sewing silk.....	15	234,250	374,510	112	228	69,016	422,351
Steel works.....	2	22,500	37,740	11	.....	4,466	52,000
Suspenders.....	5	20,800	75,300	35	327	33,756	171,000
Thread.....	5	66,500	31,400	42	57	21,722	73,000
Turners, ivory.....	2	4,000	38,085	22	.....	6,908	22,000
Total fishing interest.....	252	1,925,300	19,574	2,261	.....	740,746	2,004,423
Total.....	335	3,148,100	1,329,902	4,242	900	1,333,754	4,664,673
DISTRICT OF COLUMBIA.							
Fisheries.....	2	4,000	.....	211	..	63,626	12,739
FLORIDA.							
Arrowroot.....	2	6,000	7,200	27	2	2,608	26,300
GEORGIA.							
Timber hewers.....	14	2,200	2,403	44	.....	6,456	14,000
INDIANA.							
Distilleries, rectifying.....	3	16,500	23,700	5	.....	1,560	111,200
Leads.....	2	2,200	765	16	.....	4,660	8,000
Total.....	5	18,700	24,465	21	.....	6,420	129,200
KENTUCKY.							
Bellows.....	4	5,500	8,161	9	.....	3,840	15,500
Millstones, burr.....	1	2,500	5,000	8	.....	2,300	12,000
Printers, lithographic.....	2	2,000	2,400	9	.....	3,900	11,000
Total.....	7	10,000	15,561	26	.....	11,100	38,500

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
LOUISIANA.							
Pyrotechnics.....	1	\$500	\$1,000	3	.....	\$1,080	\$3,000
Wood, cutting and cording....	65	946,895	53,899	493	50	112,404	260,778
Total.....	66	947,395	54,899	496	50	113,484	263,778
MAINE.							
Barrel heading.....	24	17,510	22,369	108	.....	31,920	40,750
Cloth dressers.....	30	20,975	39,879	36	.....	9,613	55,160
Fisheries.....	263	486,810	18,137	1,983	.....	638,520	569,878
Furriers.....	3	21,500	60,500	12	65	13,296	69,700
Loom furnishers.....	3	10,000	4,954	8	35	7,260	15,400
Masts and spars.....	6	6,350	11,330	26	.....	8,664	23,522
Oars.....	5	2,600	2,851	19	.....	6,168	12,740
Pickles and preserves.....	2	7,800	25,495	50	.....	12,600	45,400
Shoe pegs.....	4	4,050	577	8	2	3,600	4,408
Slate quarries.....	2	55,000	.....	23	.....	6,072	7,686
Staves and shooks.....	99	164,153	190,141	428	.....	130,344	438,794
Webbing.....	2	8,000	11,024	9	25	6,408	15,400
Wool cleaners and pullers.....	3	5,000	27,125	11	.....	3,144	38,900
Total.....	446	819,048	414,982	2,721	127	877,606	1,228,716
MARYLAND.							
Bark mills.....	7	26,000	27,900	31	2	6,684	56,740
Bone dust.....	3	7,000	15,478	16	.....	4,344	24,974
Carpet weaving.....	16	8,306	22,416	37	.....	8,112	36,025
Corsets.....	2	150	322	1	9	1,320	3,000
Fringes.....	4	40,650	27,200	9	59	11,148	65,800
Earthenware.....	16	46,030	14,408	106	.....	34,092	63,700
Hose, riveted.....	2	6,800	7,250	9	.....	3,280	20,500
Lamps and ethereal oil.....	2	6,000	7,251	8	.....	2,592	13,750
Lasts.....	5	1,350	965	11	.....	4,932	12,500
Paper staining.....	6	60,000	20,274	117	.....	18,236	63,000
Printers, lithographic.....	2	2,600	3,750	20	.....	8,400	16,500
Regalia.....	3	5,500	31,600	2	70	10,320	50,500
Skin dressers.....	7	36,400	111,576	49	11	14,940	147,550
Sumac.....	3	2,900	14,075	13	.....	2,472	21,525
Total.....	78	263,776	305,875	429	151	131,572	615,264
MASSACHUSETTS.							
Bleachers and dyers.....	16	563,600	323,924	519	46	161,628	698,830
Card machine.....	16	181,850	225,146	129	13	48,984	327,123
Chocolate.....	3	56,000	94,600	17	17	8,520	121,000
Clocks.....	2	3,500	3,300	10	1	4,260	10,300
Coach lace.....	2	7,200	12,060	9	21	7,008	22,000
Corks.....	3	1,650	3,450	11	12	6,168	12,000
Corsets.....	2	500	1,100	1	7	1,368	4,900

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
MASSACHUSETTS—Continued.							
Curled hair.....	2	\$2,225	\$23,400	11	.....	\$4,152	\$26,100
Flax spinners.....	2	120,000	157,000	150	94	57,120	250,500
Fringe.....	6	66,500	67,600	69	265	43,460	120,350
Furriers.....	8	12,800	86,225	23	15	11,124	112,240
Glass cutters.....	4	3,100	9,800	19	.....	8,580	22,750
Gold beaters.....	5	15,000	101,820	21	20	13,416	120,625
Grindstones.....	3	4,500	9,500	10	.....	4,740	16,500
Ink and lamp-black.....	3	16,500	29,318	13	.....	4,586	62,024
Lasts.....	13	56,750	18,560	129	.....	55,688	125,500
Leather belting.....	4	26,000	78,035	15	3	7,656	105,500
Masts and spars.....	18	87,680	51,689	90	.....	40,344	112,311
Mats.....	3	240	2,484	9	.....	2,160	5,500
Paper stainers.....	9	86,000	98,700	134	28	40,204	229,250
Patent leather.....	3	103,000	267,700	124	.....	47,100	362,000
Pickles and preserves.....	2	80,000	126,000	64	56	31,226	276,000
Plaster casts.....	4	2,600	720	7	.....	3,420	7,250
Pocket books.....	13	26,650	60,303	52	105	30,972	120,250
Printers, lithographic.....	3	4,200	638	6	.....	2,340	5,000
Pyrotechnics.....	2	5,000	4,200	15	24	8,632	17,000
Riggers.....	8	5,600	13,260	57	.....	31,464	52,300
Sewing silk.....	5	64,000	155,000	30	110	25,848	212,000
Shoe pegs.....	5	11,000	2,674	21	5	6,120	17,600
Twine.....	5	12,800	14,331	23	15	9,228	27,225
United States armories.....	2	692,760	59,248	341	.....	171,144	302,620
Washing fluid.....	2	17,500	102,100	29	11	13,440	215,000
Whalebone.....	3	1,800	10,525	7	1	2,208	22,100
Total.....	193	2,548,205	2,222,910	2,165	669	914,848	42,555,000
MICHIGAN.							
Fisheries.....	69	29,010	.....	231	.....	63,972	76,400
Vegetable extracts.....	13	2,200	7,400	27	.....	5,700	12,200
Total.....	82	31,210	7,400	258	.....	69,672	88,600
MISSOURI.							
Furriers.....	7	753,000	.....	320	.....	88,800	\$10,350
Printers, lithographic.....	2	2,800	3,200	4	.....	3,600	10,000
Shot.....	2	45,000	227,846	32	.....	8,724	362,000
Skin dressers.....	2	8,500	13,600	11	4	3,326	31,320
Spice mills.....	3	13,200	32,075	14	.....	4,320	56,500
Total.....	16	822,500	278,791	381	4	108,780	1,001,400
NEW HAMPSHIRE.							
Blocks and spars.....	2	4,500	5,500	8	.....	3,240	12,000
Loom harness.....	3	4,600	3,226	6	25	4,776	9,700
Mica.....	2	2,000	.....	3	.....	948	1,500

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
NEW HAMPSHIRE—Continued.							
Palm leaf splitters	2	\$4,000	\$10,805	6	8	\$3,480	\$19,500
Paper stainers	3	4,900	5,700	11	2	2,904	11,890
Reeds	2	1,500	752	4	.....	1,104	3,500
Sewing silk	2	3,800	7,810	3	12	2,544	12,200
Shoe pegs	7	10,900	4,677	56	.....	15,360	30,800
Turners, iron	2	3,100	1,800	8	.....	2,580	7,900
Total	25	39,300	40,340	105	47	37,536	108,402
NEW JERSEY.							
Bark	7	18,300	13,670	16	.....	2,856	24,830
Cider bottling	10	21,500	11,485	32	.....	8,544	20,772
Flax breakers	4	32,000	25,500	42	21	15,084	50,000
Fringe and tassels	3	17,500	11,748	19	34	8,472	23,550
Lamps	4	23,700	20,815	56	.....	17,124	65,225
Locomotives	3	445,000	320,440	802	.....	231,840	680,000
Oakum	5	23,500	13,450	36	.....	6,552	25,000
Paper stainers	7	146,800	64,285	133	5	36,504	181,700
Patent leather	11	324,500	527,244	462	150	179,592	807,300
Sewing silk	3	124,000	288,500	145	180	31,560	435,475
Spice mills	6	51,100	172,169	41	.....	11,890	191,905
Sumac	4	3,200	4,660	7	.....	1,692	7,356
Turners, bone	2	1,100	1,880	12	.....	2,880	6,100
Turners, iron	5	14,700	15,107	44	.....	15,912	49,100
Total	74	1,248,900	1,480,853	1,640	400	570,432	2,548,313
NEW YORK.							
Block letter	3	11,200	7,550	14	.....	5,280	22,500
Brimstone refiners	2	16,000	50,500	20	.....	11,520	80,000
Card machine	3	32,000	42,074	17	1	8,232	56,700
Card, playing	4	147,000	105,260	66	155	43,360	176,800
Cheese boxes	37	30,280	13,728	94	.....	20,880	43,845
Clocks	4	17,500	26,632	41	6	12,432	68,000
Cork cutters	6	35,000	46,500	60	2	19,632	107,000
Fisheries	29	426,500	7,000	608	.....	153,024	352,775
Fringe	11	35,000	48,793	58	100	22,426	128,200
Furriers	18	261,500	433,180	262	300	119,148	626,545
Gold beaters	8	20,500	51,050	56	18	23,204	113,540
Ink	7	81,000	45,385	31	1	15,264	159,000
Japaners	5	9,900	26,690	32	4	10,020	71,000
Lamps	11	48,800	122,640	125	.....	81,840	358,600
Lasts	8	17,600	4,410	40	.....	12,120	22,625
Lithographers	11	76,800	42,650	104	58	51,288	136,000
Maltsters	11	271,800	363,600	73	.....	18,276	471,035
Military equipments	2	3,000	4,600	8	.....	3,800	16,800
Patterns	6	4,300	3,265	31	.....	11,604	22,210
Pocket books	19	105,600	185,600	528	26	97,264	434,500

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
NEW YORK—Continued.							
Pumps	30	\$86,370	\$55,493	148	.....	\$49,380	\$106,919
Salt bags	94	2,300	12,170	2	93	3,112	16,550
Shoe pegs	3	3,500	840	8	.....	1,932	4,810
Shot	2	900,000	528,575	33	.....	9,190	600,000
Skin dressers	10	129,600	250,987	110	6	23,772	316,120
Stationers	8	113,000	207,775	99	196	45,708	338,000
Trusses	4	4,000	4,050	6	11	4,296	16,500
Vegetable extracts	11	28,250	15,680	44	.....	10,584	45,150
Wall paper.....	6	49,500	52,335	91	2	25,872	107,600
Whalebone	5	75,300	941,600	180	.....	33,600	344,500
Whiting	6	31,150	33,000	27	.....	10,896	76,700
Willow ware	3	2,200	2,700	4	.....	1,680	5,700
Total.....	317	2,445,250	3,044,072	3,090	839	968,176	5,566,974
NORTH CAROLINA.							
Staves	61	53,025	10,230	358	.....	46,668	108,920
Timber and wood	63	184,409	4,885	908	.....	25,616	76,020
Total.....	124	237,434	15,115	566	.....	72,284	173,020
OHIO.							
Bellows	3	2,200	5,375	7	.....	2,664	14,450
Bricks, fire	4	14,450	2,165	28	.....	5,748	12,000
Cheese.....	8	11,950	54,419	43	12	11,676	67,310
Die sinkers	2	400	550	3	.....	1,330	3,000
Flax dressers and spinning	2	15,700	29,000	10	8	4,608	42,300
Gilders	2	400	790	4	.....	1,660	4,100
Ink	3	7,900	8,700	8	.....	2,760	13,400
Lasts	2	17,000	1,600	30	.....	6,880	22,000
Paint.....	4	13,000	5,509	92	.....	5,064	77,000
Paper stainers	2	3,000	3,580	10	.....	2,100	8,000
Printers, lithographic	2	800	1,035	7	.....	3,180	5,500
Regalia	3	2,500	5,900	11	.....	1,980	12,000
Shoe pegs	2	2,800	1,070	13	.....	3,540	8,800
Skin dressers	3	17,500	14,975	25	.....	7,500	30,300
Spice	6	12,850	41,644	19	.....	6,084	57,000
Tress hoops	6	1,100	1,650	20	.....	4,668	9,700
Total.....	54	122,850	177,262	260	20	73,432	387,740
PENNSYLVANIA.							
Awning and sacking bottoms..	6	5,000	9,570	18	2	5,448	21,200
Bark.....	18	61,150	53,459	40	.....	9,312	111,500
Burr millstones	8	31,600	20,885	47	.....	14,040	43,000
Chrome mining	4	2,900	5,610	47	.....	10,080	24,000
Coke.....	4	3,700	6,083	14	.....	3,444	15,250
Cork cutters.....	5	6,750	7,153	19	.....	5,520	12,000

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
PENNSYLVANIA—Continued.							
Corsets.....	4	\$8,000	\$7,832	98	40	\$8,040	\$21,000
Curled hair.....	4	164,600	152,952	136	100	44,664	251,700
Distilleries, rectifying.....	35	340,800	564,755	75	.....	22,560	679,530
Electro-magnetic instruments..	2	3,750	1,450	4	.....	1,500	5,100
Envelopes.....	2	10,500	17,180	6	36	7,090	45,000
Fire hose.....	2	8,000	96,500	12	.....	4,373	34,500
Fringe.....	12	67,700	54,139	40	153	31,848	116,600
Furriers.....	13	68,000	63,285	31	50	16,356	113,900
Gas metres.....	2	70,000	42,760	92	.....	33,600	114,000
Glass cutters.....	4	173,500	61,333	155	.....	51,790	143,900
Gold beaters.....	7	27,000	63,516	30	19	15,276	101,900
Ink.....	4	28,450	18,588	10	3	3,564	41,248
Japanners.....	4	59,300	21,750	76	10	21,648	56,250
Lamps.....	11	413,800	247,407	667	20	191,460	636,197
Lamp-black.....	5	41,250	20,925	23	1	7,056	42,250
Lasts.....	13	27,850	12,190	58	.....	17,472	42,705
Leg, artificial.....	3	2,700	1,400	15	.....	5,880	14,300
Maps.....	3	5,300	6,375	26	63	21,024	42,100
Masts and spars.....	7	29,900	26,100	38	.....	14,208	52,650
Military goods.....	2	203,000	102,900	74	130	43,440	183,600
Morocco cases.....	5	13,500	14,705	26	10	8,820	31,900
Oars.....	7	54,000	22,065	101	8	28,620	75,620
Paper cards.....	2	21,000	21,350	13	22	7,320	37,500
Paper stainers.....	11	247,000	121,052	348	15	65,640	269,300
Patent leather.....	4	106,600	62,941	74	.....	22,836	133,000
Pearl workers.....	2	1,700	3,500	4	.....	1,560	6,500
Pens and pencils.....	4	43,000	59,014	58	.....	14,028	85,300
Pickles and preserves.....	2	15,200	37,400	11	30	10,656	50,700
Pocket books.....	3	7,100	9,375	25	2	8,664	21,800
Printers, copper-plate.....	6	39,800	13,700	66	109	45,720	79,900
Printers, lithographic.....	7	70,800	23,235	109	.....	35,616	81,000
Red lead.....	2	20,000	21,130	8	.....	2,160	27,000
Silk cloth.....	2	5,600	11,235	3	5	1,776	17,050
Silk, sewing.....	2	2,300	22,225	5	14	3,744	50,400
Slates.....	6	50,000	13,174	109	.....	23,100	46,700
Steel furnaces.....	5	52,300	133,420	40	.....	16,176	172,080
Timber hewers.....	37	16,370	5,990	123	.....	30,636	33,613
Turners, bone and horn.....	3	2,400	2,400	12	.....	3,156	7,700
Turners, ivory.....	4	25,800	17,345	121	.....	25,644	56,500
Whalebone.....	3	8,000	33,760	12	.....	3,444	44,500
Total.....	301	2,669,370	2,364,977	3,049	642	969,168	4,298,973
RHODE ISLAND.							
Loom pickers.....	2	31,000	25,100	22	.....	10,608	35,500
Reeds.....	4	10,700	7,635	18	.....	6,648	22,000
Staves.....	2	700	1,130	3	.....	816	2,010
Total.....	8	42,400	33,865	50	.....	18,072	59,510

No. 2.—MISCELLANEOUS MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
SOUTH CAROLINA.							
Rice mills.....	4	\$210,000	\$1,209,000	900	.....	\$30,400	\$1,462,000
Timber hewers.....	15	19,500	1,464	39	.....	4,800	14,700
Total.....	19	229,500	1,210,464	939	.....	35,200	1,476,700
VERMONT.							
Boxes, cheese.....	3	800	590	5	.....	1,488	2,350
Ochre.....	2	11,000	2,300	10	.....	2,700	9,000
Sand paper.....	2	9,000	3,300	6	.....	864	6,000
Shoe pegs.....	3	3,500	3,300	5	8	2,532	7,500
Slate pencils.....	3	4,000	1,800	19	20	7,704	15,000
Slate quarries.....	3	4,000	650	50	.....	15,456	21,300
Total.....	16	32,900	11,640	95	28	30,744	61,500
VIRGINIA.							
Earthenware.....	14	11,225	2,695	33	.....	8,076	16,550
Shot.....	1	500	4,000	4	4	736	5,300
Sumac.....	2	2,450	5,625	5	.....	2,112	7,620
Total.....	17	14,245	12,320	42	4	17,924	29,060
WISCONSIN.							
Fisheries.....	19	10,240	2,875	47	.....	12,192	17,600
UTAH.							
Shingle machine.....	1	300	2,256	5	.....	1,440	5,000

No. 3.

GENERAL SUMMARY OF MANUFACTURES.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Agricultural implements.....	1,333	\$3,564,202	\$2,445,765	7,211	9	\$2,167,868	\$6,842,611
Arrowroot.....	2	6,000	7,200	27	2	9,600	28,800
Artificial flowers.....	23	44,100	52,785	62	372	45,792	146,120
Asheries.....	569	485,760	812,190	1,020	4	243,672	1,401,533
Awning and sacking bottoms..	6	5,000	9,570	18	2	5,448	21,200
Bagging, rope, and cordage....	417	3,341,506	5,612,247	5,258	799	1,192,786	8,002,893
Bakers.....	2,027	3,390,824	8,367,370	6,351	376	1,960,416	13,294,229
Bark mills.....	32	105,450	95,022	87	2	18,852	193,110
Barrel heading.....	24	17,510	22,369	108	.....	31,920	40,750
Baskets.....	67	38,975	40,410	190	13	56,052	147,400
Bellows.....	7	7,700	13,536	16	.....	6,504	30,225
Blacksmiths.....	10,373	5,884,149	5,111,388	24,983	19	6,508,032	16,048,536
Bleachers and dyers.....	16	563,600	323,924	519	46	161,688	686,230
Blocks and pumps.....	203	339,690	250,088	774	9	287,736	878,021
Block letters.....	3	11,200	7,550	14	.....	5,280	29,500
Blocks and spars.....	2	4,500	5,500	8	.....	3,840	12,000
Bobbin and spools.....	2	8,000	1,700	8	1	4,036	6,000
Bonnets, straw braid, &c.....	68	336,350	232,674	303	3,468	592,824	1,687,248
Bookbinders and blank books..	235	1,063,700	1,560,330	1,778	1,690	901,404	3,225,678
Bone dust.....	3	7,000	15,478	16	.....	4,344	24,274
Boots and shoes.....	11,305	12,924,919	23,842,374	72,305	32,949	21,622,608	53,967,402
Boxes, band and fancy.....	82	136,240	187,798	303	415	139,764	434,104
Boxes, cheese.....	40	31,080	14,318	99	.....	22,368	46,195
Boxes, packing.....	206	355,156	500,470	678	13	286,500	1,053,741
Brass foundries.....	148	1,585,090	2,112,592	1,666	12	571,672	3,625,618
Breweries.....	431	4,072,380	3,055,268	2,336	11	654,144	5,728,568
Bricks.....	1,603	4,367,912	1,474,023	16,796	619	4,225,088	6,610,721
Bricks, fire.....	4	14,450	2,165	28	.....	5,748	12,009
Brimstone refiners.....	2	16,000	51,500	90	.....	11,520	80,000
Britannia and plated ware....	91	592,150	760,978	1,120	156	414,140	1,535,765
Brooms.....	303	314,985	528,842	1,174	10	285,642	940,766
Brushes.....	146	710,800	638,359	1,500	905	533,460	1,573,579
Burr millstones.....	9	34,100	25,825	55	.....	17,400	55,000
Buttons.....	59	393,000	324,837	467	621	225,120	264,359
Cabinet ware.....	4,242	7,303,356	6,069,546	20,997	1,013	6,638,568	17,663,054
Calico printers.....	42	3,922,800	10,462,044	3,351	729	1,068,904	13,680,805
Card machines.....	31	213,850	267,220	146	14	57,216	363,623
Cards, playing.....	4	147,000	105,260	66	155	43,360	176,800
Carpenters and builders.....	2,790	3,289,308	7,011,929	15,276	6	5,589,320	16,886,819
Carpets.....	116	3,622,981	3,075,592	3,881	2,305	1,246,560	5,402,634
Carpet weaving.....	16	8,396	22,416	37	.....	8,112	36,025
Cars, railroad.....	41	896,015	1,393,676	1,554	.....	664,708	2,492,558
Carvers.....	37	40,080	26,057	168	.....	78,516	144,880
Cement, (for building purposes)	35	391,525	238,157	407	.....	117,924	509,110
Chandlers.....	487	4,145,400	7,008,767	2,660	156	775,300	10,199,730
Charcoal.....	140	270,225	161,608	767	.....	176,770	386,651

No. 3.—GENERAL SUMMARY OF MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Cheese	8	\$11,850	\$54,419	43	12	\$11,676	\$67,210
Chemicals.....	170	2,335,715	3,235,380	1,335	54	422,560	4,973,630
Chocolate	3	56,000	94,600	17	17	8,520	121,000
Chrome mining	4	2,900	5,610	47	.....	10,080	24,400
Clocks	23	499,800	456,834	777	23	278,508	1,181,500
Clock cases	5	12,600	12,690	49	4	16,960	28,000
Clock springs.....	6	22,300	34,875	69	14	23,336	72,067
Clothiers and tailors	4,278	12,509,161	25,730,258	35,051	61,500	15,032,340	48,311,700
Cider bottling.....	10	21,500	11,485	32	.....	8,344	20,772
Coaches and carriages.....	1,822	4,973,707	3,955,689	13,982	58	4,268,904	11,073,630
Cloth dressers.....	30	90,975	39,879	36	.....	9,612	55,100
Coach lace	4	90,900	90,938	35	31	19,979	47,436
Coal mining	510	8,317,501	246,414	15,112	6	4,069,188	7,174,739
Coffee and spice	48	438,662	843,254	305	12	99,900	1,240,614
Coke.....	4	3,700	6,093	14	.....	3,444	15,229
Combs	151	633,637	843,482	1,496	362	494,196	1,615,859
Confectioners	383	1,035,551	1,691,824	1,389	345	458,904	3,046,671
Coopers	2,902	2,383,040	2,644,582	11,900	16	3,201,204	7,126,317
Copper and brass	175	2,850,981	3,062,661	2,368	2	856,044	4,262,921
Corks	3	1,650	3,450	11	12	6,106	12,000
Cork cutters.....	11	41,750	53,653	79	2	25,152	126,880
Corsets.....	8	8,650	9,364	30	56	10,728	26,200
Cottons.....	1,074	76,032,578	37,778,064	35,225	62,661	17,267,112	65,501,627
Cottons and woolsens, (mixed).....	103	1,711,730	2,321,986	2,667	1,901	808,752	3,623,731
Curled hair	6	166,825	176,352	147	100	48,216	273,200
Cutlery and edge tools.....	401	2,321,695	1,439,462	4,247	28	1,420,841	3,212,241
Daguerreotypists.....	74	89,225	99,789	141	17	70,500	257,267
Distilleries.....	968	5,409,334	10,543,201	3,985	23	1,069,264	15,776,249
Distilleries, rectifying	38	357,300	658,452	80	.....	24,120	791,639
Die sinkers	2	400	550	3	.....	1,300	3,000
Dyers	46	331,250	754,379	434	26	127,320	1,026,721
Engravers.....	112	172,065	130,714	433	47	227,776	566,065
Earthenware	30	57,325	17,103	139	.....	42,168	100,536
Electro-magnetic instruments.....	2	3,750	1,450	4	.....	1,500	5,100
Envelopes.....	2	10,500	17,180	6	36	7,020	45,000
Fire engines.....	16	152,700	116,267	248	.....	23,312	226,330
Fire hose.....	2	8,000	26,500	12	.....	4,272	34,200
Fisheries	1,407	8,962,403	71,517	20,814	424	4,639,198	10,626,163
Flax breakers.....	4	32,000	25,500	42	21	15,064	50,000
Flax dressers and spinners	4	135,700	186,000	160	102	61,728	201,000
Flour and grist mills	11,891	54,415,581	113,036,698	23,260	50	5,680,164	136,058,736
Fringe, gimp, and tassels.....	38	244,350	223,680	205	681	142,926	583,000
Furriers	49	1,116,800	643,170	648	430	248,724	1,508,025
Gas	30	6,674,000	503,074	250	2	390,684	1,221,746
Gas fixtures	20	104,250	130,969	241	.....	75,312	222,725
Gas metres	2	70,000	42,760	22	.....	33,000	114,000
Gilders	2	400	790	4	.....	1,660	4,100
Glass.....	94	3,402,350	1,556,233	5,571	97	2,004,576	4,641,676
Glass cutters	8	176,600	71,133	174	.....	60,300	165,250

No. 3.—GENERAL SUMMARY OF MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Gloves	110	\$181,900	\$392,837	399	1,609	\$533,496	\$708,184
Glue	47	519,950	371,616	378	13	99,432	652,405
Gold beaters	20	62,500	216,360	107	57	52,596	336,065
Gold mining	1,015	1,814,012	57,711	4,804	80	3,639,832	9,551,853
Gold rockers	7	8,900	75,950	30	.....	14,076	252,460
Grindstones	3	4,500	9,530	10	.....	4,740	16,500
Gum and varnish	3	1,550	10,500	4	.....	1,596	15,375
Guns	317	577,609	969,673	1,547	.....	518,292	1,173,014
Hardware	340	3,539,625	3,015,688	6,149	881	1,973,904	6,957,770
Hats and caps	1,648	4,427,798	7,104,028	6,974	8,296	3,179,700	14,319,664
Hose, riveted	2	6,800	7,250	9	.....	3,280	20,500
Hosiery	85	544,735	415,113	835	1,490	360,336	1,098,108
India rubber goods	34	1,455,700	1,008,738	1,010	1,558	537,698	3,094,336
Ink	14	116,650	72,673	49	4	21,568	213,648
Ink and lamp-black	3	16,500	29,318	13	.....	4,596	62,084
Iron forges	375	8,517,011	5,338,505	7,698	77	2,310,760	9,092,705
Iron foundries	1,319	14,722,749	8,534,034	18,938	31	6,279,912	20,111,517
Iron furnaces	404	16,648,360	7,538,118	20,847	207	5,011,300	13,491,698
Iron manufactures	99	603,800	565,864	1,079	3	409,728	1,425,343
Iron mining	197	983,775	63,651	2,192	3	590,866	1,217,803
Iron rolling	64	5,214,700	4,353,150	3,800	20	1,451,748	6,926,081
Japanners	9	69,900	48,440	108	14	31,668	127,250
Lamps	26	498,360	480,892	918	20	290,424	1,080,022
Lamp-black	5	41,850	20,985	23	1	7,056	42,250
Lamps and ethereal oil	2	6,000	7,951	8	.....	2,592	13,750
Lasts	43	192,450	38,420	984	.....	104,152	240,826
Lead pipe	10	272,250	678,320	71	.....	26,004	797,166
Lead	156	603,196	1,532,585	737	16	181,756	2,150,068
Leather belting	4	26,000	78,035	15	3	7,656	105,500
Legs, artificial	3	2,700	1,400	15	.....	5,680	14,300
Lithographers	11	76,600	49,650	104	58	51,388	136,000
Lime	761	1,124,072	1,106,775	2,834	4	735,746	2,226,242
Locomotives	3	445,000	320,440	892	.....	231,840	680,091
Looking glass and picture frames	108	445,940	544,980	884	79	347,976	1,252,746
Loom furnishers	3	10,000	4,984	8	35	7,960	15,400
Loom harness	3	4,800	3,226	6	25	4,776	9,719
Loom pickers	2	31,000	25,100	29	.....	10,608	35,500
Lumber, sawing and planing	17,895	40,038,427	27,583,529	51,766	422	13,622,059	58,520,966
Machinists and millwrights	1,022	19,225,918	11,367,728	27,624	58	9,639,912	27,926,344
Maltsters	11	271,800	353,699	73	.....	18,876	471,025
Matrices, friction	60	109,140	137,514	481	540	154,620	427,823
Mathematical instruments	90	326,550	165,696	694	40	260,812	793,750
Maps	3	8,900	6,275	26	63	21,624	42,100
Masts and spars	39	194,120	89,719	154	.....	63,216	189,422
Mats	3	240	2,484	9	.....	2,180	5,500
Mica	2	2,900	.....	3	.....	248	1,500
Medicines, drugs, and dye-stuffs	143	1,427,375	1,657,866	693	134	276,488	3,504,465
Military equipments	2	3,000	4,600	8	.....	3,600	16,800

No. 3.—GENERAL SUMMARY OF MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Military goods.....	2	\$503,000	\$109,900	74	130	\$43,440	\$1,140
Milliners.....	532	600,193	1,490,808	181	3,688	610,636	2,719.99
Millstones.....	23	81,835	61,791	87	.....	32,508	164.57
Mineral water and pop.....	64	228,650	313,631	570	19	153,916	76.00
Morocco cases.....	5	13,500	14,705	26	10	8,820	1.30
Morocco dressers.....	116	1,387,750	2,286,985	1,796	171	623,773	3,000.85
Musical instruments.....	204	1,545,835	698,168	2,307	94	1,054,728	2,347.75
Nails.....	87	4,498,498	4,438,978	5,227	4	1,812,973	7,623.34
Oakum.....	5	23,500	13,450	36	.....	6,552	2.00
Oakum pickers.....	5	38,500	38,998	49	.....	13,020	1.12
Oars.....	12	56,600	94,916	190	8	34,788	2.25
Ochre.....	2	11,000	2,900	10	.....	2,700	1.20
Oil, castor.....	23	152,820	447,065	147	.....	43,694	20.00
Oil, lard.....	41	369,950	1,271,602	182	11	52,956	1,67.00
Oil, linseed.....	168	806,650	1,477,645	477	9	143,664	1,96.50
Oil, whale.....	50	2,791,000	6,492,878	492	52	198,468	7,623.34
Oil, miscellaneous.....	10	35,200	44,103	58	.....	13,128	6.12
Oil cloths.....	56	640,700	822,708	648	2	178,854	1,222.25
Paints.....	4	13,000	5,309	22	.....	5,064	1.00
Palm leaf splitters.....	2	4,000	10,005	6	8	3,480	2.25
Paper.....	443	7,260,864	5,555,922	3,635	2,950	1,497,722	12,707.17
Paper cards.....	2	21,000	21,350	13	22	7,320	1.20
Paper stainers.....	38	547,705	314,201	753	50	166,268	70.25
Patent leather.....	20	522,100	826,425	687	150	262,948	1,222.25
Patterns.....	6	4,300	3,965	31	.....	11,604	2.12
Pearl workers.....	2	1,700	3,800	4	.....	1,560	1.20
Pens and pencils.....	4	43,000	59,014	58	.....	14,026	6.12
Percussion caps.....	2	5,000	15,350	9	3	2,820	2.00
Perfumes and fancy soap.....	39	197,550	163,826	125	63	43,720	35.50
Pickles and preserves.....	6	103,000	257,895	125	86	54,552	26.25
Pins.....	4	164,800	137,820	58	207	52,104	27.25
Plaster cases.....	4	2,600	720	7	.....	3,420	1.50
Plaster, (gypsum).....	140	410,440	229,063	381	.....	100,632	26.25
Plumbers.....	124	646,225	1,297,119	1,037	3	377,944	2,262.25
Pocket books.....	37	144,750	262,778	609	161	162,356	222.25
Pork and beef packing.....	185	3,482,500	2,451,096	3,267	9	1,231,536	11,222.25
Potteries.....	484	777,544	275,063	2,246	43	607,418	1,662.25
Powder, gun.....	54	1,179,223	880,927	576	3	192,388	1,722.25
Printers, lithographic and cop- per-plate.....	26	148,500	59,558	241	134	115,836	27.25
Printers and publishers.....	673	5,892,715	4,064,225	6,989	1,279	2,737,308	11,222.25
Pumps.....	30	86,370	55,493	148	.....	49,380	10.25
Parotechnists.....	3	8,500	5,200	18	24	2,912	2.25
Red lead.....	2	20,000	21,130	8	.....	2,160	1.20
Reeds.....	6	12,200	8,267	22	.....	7,722	2.25
Regalias.....	6	8,000	36,000	13	70	12,300	2.25
Rice mills.....	4	210,000	1,200,000	200	.....	38,400	1,662.25
Riggers.....	8	5,800	12,800	57	.....	31,464	2.25
Saddles and harness.....	3,515	3,209,379	4,427,008	12,592	360	3,154,008	2,222.25

No. 3.—GENERAL SUMMARY OF MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Sails	183	\$366,380	\$380,414	838	10	\$349,644	\$1,654,503
Salt bags	24	2,300	19,170	2	23	3,119	16,550
Salt and salt refining	340	2,640,680	1,051,419	2,699	87	753,360	2,177,945
Sand paper	2	9,000	3,900	6	.....	\$64	6,000
Sash and blinds	433	1,066,355	859,827	2,448	49	840,994	2,977,061
Scales and beams, (weighers?) ..	22	184,000	130,967	402	.....	144,588	359,505
Sewing silk	27	438,350	848,945	295	554	152,719	1,909,496
Silk cloth	2	5,600	11,235	3	5	1,778	17,050
Silversmiths, jewelers, &c.	583	3,628,170	4,220,619	4,873	389	2,131,296	9,401,765
Shingles	520	853,940	406,932	2,127	.....	425,328	985,957
Shingle machine	1	300	2,256	5	.....	1,440	5,000
Ship building and boats	899	5,152,309	7,926,401	12,623	6	5,922,576	16,595,683
Shoe pegs	24	35,750	13,238	111	15	33,084	75,918
Shot	5	245,500	760,421	69	4	18,580	988,550
Skin dressers	22	192,000	301,138	195	21	49,548	525,370
Slates	6	50,000	13,174	109	.....	23,100	46,700
Slate pencils	3	4,600	1,800	19	20	7,704	15,000
Slate quarries	5	58,000	650	80	.....	21,528	29,056
Spice	6	12,850	41,644	19	.....	6,084	57,900
Spice mills	9	64,300	204,244	55	.....	16,140	248,405
Starch	146	692,675	799,459	686	8	193,224	1,261,468
Stationers	8	113,000	207,775	99	126	45,708	332,900
Staves	63	53,725	11,360	361	.....	47,484	104,992
Staves and blocks	99	164,153	190,141	428	.....	130,344	438,794
Steel furnaces	5	52,300	133,420	40	.....	16,176	172,080
Steel works	2	32,500	37,740	11	.....	4,488	53,400
Stone and marble quarries	1,144	4,032,182	2,475,760	9,996	5	3,431,194	8,180,115
Stoves and ranges	230	3,179,475	2,913,943	4,227	.....	1,617,974	6,124,748
Sugar refiners	23	2,669,000	7,662,685	1,644	12	604,248	9,598,800
Sunac	9	15,550	24,360	25	.....	13,276	36,731
Surgical instruments	37	101,450	80,987	189	111	94,044	259,400
Suspenders	5	20,800	75,300	35	327	33,756	171,000
Tanners and curriers	6,598	20,602,945	22,865,253	22,451	124	5,606,110	37,702,323
Timber hewers	129	222,479	14,742	414	.....	67,506	132,246
Tin and sheet iron works	2,280	4,129,587	4,305,389	7,365	28	2,363,100	8,933,188
Thread	5	66,100	31,400	42	57	21,799	73,400
Tobaccoists	1,418	5,008,225	7,341,728	12,261	1,975	2,420,208	13,491,147
Tress hoops	6	1,100	1,650	20	.....	4,668	9,700
Trunks and carpet bags	116	356,660	765,816	1,056	284	366,180	1,558,368
Trusses	4	4,000	4,050	6	11	4,286	16,500
Turners	440	663,615	407,043	1,621	27	493,020	1,374,449
Turners, bone and horn	5	3,500	4,280	24	.....	6,036	13,800
Turners, iron	7	17,800	16,907	52	.....	18,492	57,000
Turners, ivory	7	37,900	56,880	147	.....	33,804	111,880
Turpentine	853	1,663,692	1,484,318	3,369	68	447,348	2,855,657
Twine	5	12,800	14,321	23	15	9,228	27,275
Type and stereotype	42	513,700	228,922	775	224	275,220	913,200
Umbrellas	80	781,760	1,399,607	814	1,722	433,548	2,505,622
United States armories	2	899,760	52,948	241	.....	171,144	308,620

No. 3.—GENERAL SUMMARY OF MANUFACTURES—Continued.

Manufactures.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor.	Value of product.
Upholsterers	155	\$365,635	\$963,661	804	706	\$385,580	\$1,782
Vegetable extracts	94	30,450	23,080	71	.....	16,984	2.20
Wall paper.	6	49,500	58,335	91	9	25,879	10.00
Washing fluid.	2	17,500	109,100	29	11	13,440	21.00
Weavers	153	126,800	134,490	377	155	102,204	70.4
Webbing.....	2	8,000	11,694	9	25	6,408	1.00
Whalebone.....	11	85,100	265,685	189	1	39,252	45.00
Wheelwrights.....	4,296	3,146,211	1,896,551	11,543	7	3,157,544	45.61
Wigs and curls	25	33,900	36,383	40	68	25,688	2.0
Whips and canes	70	196,895	237,643	519	532	125,984	57.5
White lead	51	3,124,600	3,541,072	1,506	.....	512,368	5.22
White and 'lock smiths.....	89	144,022	110,155	413	2	146,712	25.7
Wire and wireworkers.....	83	537,725	534,546	656	18	204,126	1.62
Whiting	6	31,150	33,000	27	.....	10,886	2.0
Willow ware.....	3	2,200	2,760	4	.....	1,620	1.0
Wood cutting and cording.....	65	246,895	53,900	493	50	112,404	20.7
Wool cleaners and pullers.....	3	5,000	27,125	11	.....	2,144	2.0
Wooden ware.....	197	530,165	436,676	1,223	32	372,132	11.0
Wool carders.....	630	739,925	1,251,550	1,071	22	225,572	1.20
Woolens, carding and fulling..	1,817	26,071,548	24,912,455	22,919	14,976	7,167,900	22.25
Miscellaneous	564	4,045,370	3,949,944	4,247	742	2,231,376	12.20

No. 4.

CONDENSED TABULAR STATEMENT OF THE AGGREGATES OF MANUFACTURES
IN EACH STATE AND TERRITORY.

States and Territories.	No. of establishments.	Capital.	Cost of raw material.	Male hands.	Female hands.	Cost of labor per annum.	Value of product.
Alabama.....	1,096	\$3,450,606	\$2,224,960	4,397	539	\$1,105,224	\$4,528,876
Arkansas.....	261	305,015	215,729	812	30	153,876	537,908
California.....	1,003	1,006,197	1,201,154	3,964	.....	3,717,180	12,862,522
Connecticut.....	3,737	25,878,648	23,608,971	34,248	16,483	12,435,964	47,114,585
Delaware.....	531	2,978,945	2,884,607	3,327	651	936,924	4,649,296
District of Columbia.....	403	1,001,575	1,405,871	2,034	536	757,584	2,690,258
Florida.....	103	547,060	220,611	676	115	199,452	668,325
Georgia.....	1,522	5,456,483	3,404,917	6,650	1,718	1,709,064	7,062,075
Illinois.....	3,162	6,217,765	8,959,327	11,066	493	3,204,336	16,534,272
Indiana.....	4,392	7,750,402	10,369,700	13,748	692	3,728,844	18,725,423
Iowa.....	522	1,222,875	2,356,881	1,667	20	472,016	3,551,783
Kentucky.....	3,609	11,810,462	12,165,075	19,576	1,900	5,106,048	21,710,212
Louisiana.....	1,006	5,032,424	2,459,508	5,458	759	2,033,998	6,779,417
Maine.....	3,974	14,699,152	13,553,144	21,653	6,167	7,485,588	24,661,057
Maryland.....	3,725	14,234,450	17,690,836	22,729	7,483	7,403,832	33,042,892
Massachusetts.....	8,852	68,940,292	85,856,771	107,784	69,677	41,954,736	157,743,994
Michigan.....	2,033	6,563,660	6,136,368	6,990	354	2,717,124	11,169,092
Mississippi.....	947	1,815,820	1,275,771	3,046	108	771,528	2,912,068
Missouri.....	2,923	8,576,607	12,798,351	14,680	928	4,692,648	24,324,418
New Hampshire.....	3,211	18,242,114	12,745,466	14,103	12,989	6,123,876	23,164,503
New Jersey.....	4,207	22,293,258	22,011,871	29,068	8,762	9,364,740	39,851,256
New York.....	23,553	99,904,405	134,655,674	147,737	51,612	49,131,000	237,597,249
North Carolina.....	2,663	7,456,860	4,602,501	12,473	2,198	2,383,456	9,111,050
Ohio.....	10,622	29,019,538	34,678,019	47,054	4,437	13,467,156	62,692,279
Pennsylvania.....	21,605	94,473,810	87,906,377	124,688	22,078	37,162,222	155,044,210
Rhode Island.....	864	12,235,676	13,186,703	12,923	8,044	5,047,080	22,117,688
South Carolina.....	1,430	6,053,265	2,787,534	5,992	1,074	1,127,712	7,045,477
Tennessee.....	2,867	6,527,729	5,166,886	11,080	959	2,247,492	9,725,608
Texas.....	209	539,290	394,642	1,042	24	221,368	1,168,538
Vermont.....	1,849	5,001,377	4,172,552	6,894	1,551	2,202,348	8,570,920
Virginia.....	4,740	18,109,143	18,101,131	25,790	3,320	5,434,476	29,602,507
Wisconsin.....	1,969	3,382,148	5,414,931	5,798	291	1,712,496	9,223,068
Minnesota.....	5	94,000	24,300	63	.....	18,540	58,300
New Mexico.....	23	68,300	110,220	81	.....	20,772	249,010
Oregon.....	52	243,600	209,560	225	.....	288,620	2,236,610
Utah.....	14	44,400	337,381	51	.....	9,984	291,220
Aggregate.....	123,025	533,245,351	555,122,822	731,137	225,922	226,755,464	1,019,106,616

REPORT
OF
THE SECRETARY OF WAR,

COMMUNICATING,

*In compliance with a resolution of the Senate, Captain Simpson's report
and map of wagon road routes in Utah Territory.*

FEBRUARY 26, 1859.—Referred to the Committee on Military Affairs and the *Militia*.
FEBRUARY 28, 1859.—Report in favor of printing submitted and referred to the Committee
on Printing.
MARCH 2, 1859.—Report in favor of printing the usual number submitted, considered,
and agreed to.

WAR DEPARTMENT, *February 22, 1859.*

SIR: In compliance with a resolution of the Senate of the 10th instant, I have the honor to transmit, herewith, a report from the Chief Topographical Engineer, communicating a copy of "the report and map of the wagon road routes extending from Bridger's Pass to City Rocks, in Utah Territory," recently transmitted by Captain Simpson, of the Topographical Engineers.

Very respectfully, your obedient servant,

JOHN B. FLOYD,
Secretary of War.

Hon. J. C. BRECKINRIDGE,
President of the Senate.

BUREAU OF TOPOGRAPHICAL ENGINEERS,
Washington, February 22, 1859.

SIR: I have the honor of transmitting herewith a copy of the report and map of Captain J. H. Simpson, corps of Topographical Engineers, of the wagon road routes from Bridger's Pass to City Rocks, in Utah Territory, called for by a resolution of the Senate of the 10th instant.

Respectfully, sir, your obedient servant,

J. C. WOODRUFF,
Capt. Top. Eng'rs, Asst. to Bureau, in charge.

Hon. JOHN B. FLOYD,
Secretary of War.

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Report by Captain J. H. Simpson, corps of Topographical Engineers, of reconnaissances, &c., in the Territory of Utah, in the months of August, September, and October, 1858, under instructions from Brevet Brigadier General A. S. Johnston, U. S. A., commanding the department of Utah.

OFFICE OF TOPOGRAPHICAL ENGINEERS, DEPARTMENT OF UTAH,
Camp Floyd, Utah Territory, December 28, 1858.

SIR: I have the honor to submit below a report of the several reconnaissances and labors I have been engaged in since August 19, the date of my reporting for duty, at these headquarters. These are a reconnaissance and opening of a new wagon route from Camp Floyd to Fort Bridger, and an exploration over a portion of the Great Salt Lake desert, in order to the melioration and shortening of the great northern emigration and post route to California. For a brief synopsis of the report I refer you to the table of contents.

Accompanying the report will be found a map illustrative of the routes explored.

I am, sir, very respectfully, your obedient servant,

J. H. SIMPSON,

Captain Corps of Topographical Engineers.

Brevet Major FITZ JOHN PORTER,

Assistant Adjutant General.

On the 24th of August last I had the honor to receive the following instructions :

HEADQUARTERS, DEPARTMENT OF UTAH,
Camp Floyd, Utah Territory, August 24, 1858.

SIR: With a view of ascertaining the practicability of opening a wagon road to Fort Bridger, the commanding general directs that you proceed to morrow to examine the route to that place known as the Provo or Timpanogos route. It is represented that the main obstacle to success has been overcome by the Mormons opening a road some eight miles up the Provo river. Little, however, of the features of the country beyond are known, except through Lieutenant Beekwith's report, (a copy of which is furnished to you,) so that your attention will be principally directed to the facilities and difficulties presented by the remaining portion of the route for the movement of trains (pack and wagon) and bodies of troops, camping places, as well as the resources of the country for fuel, grass, and water.

From the mouth of Morin's Fork (White Clay creek) and the sources of Yellow creek, the commanding general wishes you to push your examinations to the main Salt Lake road, that, if found practicable, and your excursion meets with success, connecting roads may be opened, and, if necessary, the old road, in part, used. Also, as soon as you cross the Muddy, he wishes you, instead of immediately

taking the road due east to Black's Fork, to see if you cannot easily ascend to the table land and go direct to Fort Bridger by the south end of the large buttes west of that place.

The commanding general will be pleased to have your observations directed to the comparative heights of the ridges over which you will pass, that you may form some idea of the practicability of the route, late in the fall and early in the spring, for bringing pack animals and herds of cattle into this valley.

You will probably find parties of Ute Indians in the vicinity of Kansas prairie. As some of them visit that portion of the country in winter and early in spring, you may obtain much information of the nature of the winters in these mountain valleys.

An escort of one officer and twenty men will accompany you supplied with fifteen days' provisions on pack mules.

I am, sir, very respectfully, your obedient servant,

F. J. PORTER,
Assistant Adjutant General

Captain JAMES H. SIMPSON,
Topographical Engineers, Camp Floyd, Utah Territory.

Consequent upon the above were issued the following orders:

Special orders, No. 41.

HEADQUARTERS 2D DRAGOONS,
Camp Floyd, August 24, 1858.

Pursuant to instructions from the headquarters of the department of Utah, of this date, requiring one officer and twenty men as escort to Captain James H. Simpson, Topographical Engineers, charged with examining the Provo route to Fort Bridger, a detail will be made of one sergeant, one corporal, and eighteen privates from the command for said purpose. The command will take fifteen (15) days' provisions.

Brevet Second Lieutenant Samuel W. Ferguson is assigned to command the escort.

First Lieutenant J. P. Holiday, regimental quartermaster, will furnish the necessary pack animals.

By order of Lieutenant Colonel M. S. Howe.

G. A. GORDON,
First Lieutenant and Acting Adjutant 2d Dragoons.

In obedience to instructions I left Camp Floyd August 25, Lieutenant S. W. Ferguson, 2d dragoons, in command of a detachment of twenty dragoons, accompanying me as an escort, and the necessary provisions, blankets, &c., being carried on ten pack mules. We took with us no tents. I have already, September 3 and September 3^d reported to you briefly the character of the route projected by me under the instructions of the general commanding, but proceed now to give a more detailed description of it. The reconnaissance was made in eighteen days, the party returning to Camp Floyd September

12, and between the 16th of September and the 6th of October the road, as located, was opened and graded by the troops. Without going into the particulars of every day's travel, which might prove tedious, and would fail to give a clear view of the route I selected, I will state that the ground was quite thoroughly looked over, and though the route which has been since opened may, in two or three places which will be mentioned in the sequel, be somewhat shortened, yet, as a whole, it is believed to be as well located as the country will permit. Accompanying this report will be found a map, upon which, in red ink, will be noticed the road as located and opened, and in dotted lines the other portion of country passed over in the reconnaissance. The guide who accompanied me was Mr. Isaac Bullock, of Provo, whose services I found valuable.

Description of the portion of the route from Camp Floyd to the mouth of the Timpanogos River cañon, a distance of 29½ miles.

The route from Camp Floyd pursues a course east of north for about 8 miles, when it passes over a low ridge, and, gradually turning more eastwardly, leaves Cedar valley, and gets into the valley of Jordan river, which river it crosses in 6 miles, by a toll-bridge sixty feet long; and thence, continuing its course eastwardly along and 2 miles from the foot of Utah Lake, in 2½ miles reaches Lehi city; thence, turning gradually southwardly, and slightly diverging eastwardly from a parallelism to the shore of Utah Lake, which it leaves to the right at about an average distance of 3½ miles, and, skirting the Wahsatch mountains on your left, in 3 miles it passes through American Fork settlement, (Lehi city on the maps;) in 3½ miles more Battle creek, (Pleasant Grove on the maps,) and in 6½ miles reaches the mouth of Timpanogos River cañon, which it crosses by a good ford—whole distance from Camp Floyd 29½ miles.

The road to this point, except occasionally where irrigating ditches cross it, is excellent, the only hills being those 8 miles out from Camp Floyd. The soil of Cedar valley, as also that of Utah valley, which is generally of a yellowish color, is of an arenaceous character, superposed on sand, and the consequence is that, although containing all the elements of fertility, the rains are not of themselves copious and constant enough to keep it sufficiently moist to sustain vegetation. Where the land therefore cannot be irrigated, which is the case in Cedar valley, except in two or three localities of small area, the soil, for agricultural purposes, is utterly worthless. Along the road, however, in Utah valley, in the neighborhood of the towns named, there are extensive fields which, on account of the irrigation they receive, are quite productive. The irrigation is made possible by the availability of the mountain streams, Dry Fork, American Fork, and Battle creek, the waters of which are distributed in *acequias* or ditches, from which the fertilizing element is carried over the soil in numerous rills. The two first streams are tributary to Lake Utah, and Battle creek loses itself in the soil. It is something notable that a large number of the fields have been abandoned from the soil becoming saline

by use, and it is quite possible that, from this cause, a large portion of it will, in time, be rendered worthless. Indeed, while the country in the Territory, as a whole, presents a *very insignificant fraction* of cultivable soil, (that which can be cultivated,) experience shows it likely to become barren from use.

The great staple is wheat, of which as many as seventy-five bushels have been raised to the acre. This, however, is rare; forty bushels are more common, and generally not more than twenty. Oats and barley do well. Corn does not mature sufficiently, on account of the early frosts of autumn, and therefore but little is planted. Potatoes and garden vegetables generally grow quite luxuriantly. Fruits like the melon, peach, and apricot mature tolerably well, and the apple also grows here, but as yet I have seen none to assure me that they at all equal those which can be raised in the States. It is also to be borne in mind, in the cultivation of the cereals, vegetables, and fruits, that frequent irrigation is necessary, and to this, of course, is superadded all the other labor of tillage, which makes the aggregate of work necessary to make the soil produce to any advantage excessive. The fields are generally enclosed by mud walls, which not unfrequently give evidence of dilapidation. The ordinary tract of land owned and cultivated by a single hand is twenty acres, though larger tracts are owned and cultivated by those who can afford to buy more and command the necessary labor. There is no grass along the route, except on the Jordan, and no wood. The fuel which is used by the inhabitants of the towns named is brought from the cañons in the mountains at a very great expense. Forage and fuel, however, are purchasable by the government.

Lehi City is a walled town, containing probably 100 houses and 1,000 inhabitants. The houses are of adobes, (sun-dried bricks) and in some instances of logs. The appearance of the town is rather indifferent, and indicates no great thrift.

American Fork Settlement (Lake City) has some 50 houses and probably some 500 inhabitants. The houses are generally adobe, quite small, and of but one story, all indicating a poor and shiftless population.

Battle Creek Settlement contains probably 60 houses, all small, mean-looking adobe huts, and the population is about 600. A very common mode of building in these towns is to take the earth of the inside of the building to make the adobes, and thus have one story below and one above ground. The generality of the houses is far below the character what obtains among the poorest of our population in the States. The roofs are generally of mud, and give frequent evidence of tumbling in, and the doors and windows all indicate penury and an inattention to cleanliness.

Provo is a city in the valley of Lake Utah, about 5 miles south of the Timpanogos cañon. It derives its name, according to Mr. Bellock, from a Frenchman of that name from St. Louis, who was the first white man that ever came from Fort Bridger by way of the Timpanogos river. The Timpanogos river has been, therefore, known among the inhabitants as the Provo river, and hence the origin of

the name of the town near. It is much better built than the towns I have described. The guide, who lives there, says it contains about 400 houses and probably 600 families, 7 to a family, or about 4,200 inhabitants in the whole town, to make a large estimate. It, like the other towns I have seen in Utah, is built principally of adobes, the houses, however, being generally small. Each town has a large building which they call the tabernacle, and which is devoted to religious and secular purposes, the theatre, I noticed, being held in one of them. The main street of Provo is probably eight rods wide, the others six. This town, like all the others I have described, is laid out in regular squares. They are all inhabited by farmers, who cultivate the land contiguous to the town, and the yards are filled with the implements of husbandry, stacks of wheat and hay, and in the evening, during harvest, there is to be seen a constant succession of wagons filled with the produce of the field, and cattle driven in for security. The guide says originally the people lived on their farms, but the Indians became so troublesome as to oblige them to collect in towns for mutual defence. The inhabitants send out their cattle in herds to pasture, the herdsman passing in the morning from one end of the town to the other, and, as he does so, sounding his horn as a signal for the owners to turn their stock into the general herd. The charge is about two cents per animal per day.

From the mouth of Timpanogos cañon to the top of the divide between the Timpanogos and Silver creek, 31½ miles.

The Timpanogos river is a splendid, dashing, mountain stream of pure water, of a width ranging in places from 30 to 100 feet, and generally about 2 feet deep. Large trout are found in it. Its bottom is rocky. Its sources are in the Uinta mountains, from which it flows for about half its length (which probably is 60 miles) in a westerly direction, and then, breaking through the Wahsatch mountains, in a southwest direction for the balance of the way (30 miles) into Utah lake. The road takes up the valley of this river, which is deeply cañoned for about 7 miles above its debouchement into Utah lake valley. The rocks on either side, commensurate with the cañon, especially on the south, are magnificent, and encroaching, as they do, very nearly on the stream, show themselves in their full proportions. Those on the south side have their escarpments very nearly vertical, while those on the north are girted at their base by terraces of narrow breadth. About four miles up the cañon, on its south side, may be seen a beautiful waterfall of from 800 to 1,000 feet in height, and coming as it does from such an altitude, and apparently fed by nothing, it is an object of a great deal of interest; I have called it on the map "Beautiful cascade." Through this cañon, and five miles further, say for a distance of 12 miles from the mouth, there is at present a road which the people of the Territory constructed last spring and summer. Previous to the opening of this road persons could pass only upon horseback along an Indian trail; the rocky promontories or points of the confining walls, as well as the narrowness of the

cañon, effectually obstructing wheel carriages. A company of citizens, however, have, by dint of great labor, cut through these promontories, made deep excavations along the steep, and in many instances rocky side hills, and have built up revetted embankments, the consequence of which is, they have an excellent mountain road, and one that does them a great deal of credit. The width of the roadway, however, in many places and for considerable distances, is not sufficient for teams to pass each other, and the turns are sometimes so short that heavy six-yoke ox-teams are liable, except the driver use the greatest care, to a capsizing into the stream below. The drainage of the mountain streams and rills from the upper side of the road is defective, and the consequence is that pools of water have been allowed to collect in the road, and the road at these places made boggy. With these defects obviated, the road would be as good as is to be found anywhere. It was constructed by the inhabitants to open the communication to Round Prairie, (an expansion of Timpanogos valley, 14 miles above the mouth of the cañon,) and to enable the people of Provo to carry away the wood found along the river and in the side cañons. About one mile from the mouth of the cañon the road crosses the Timpanogos by an excellent bridge, 60 feet long. The tolls upon the road are here collected, and as it is of interest to know the rates, I here insert a notice which I saw stuck up on the post of the toll-gate:

"Rates of toll on the Provo cañon road.

"For one cord of wood or timber hauled out	\$1 00
"For one pair of horses, mules, and carriage	50
"For one horse, mule, and rider	10
"Cattle, horses or mules, driven up or down, for each head ..	5
"Sheep and hogs	5
"For each load of brick or hay	1 00

"The above is a correct list of rates of toll as fixed by the county court. And all persons are hereby notified and instructed that no one will be permitted to travel the road without an order from Bishop E. H. Blackburn, and the gate-keeper will take due notice of the above instructions, and govern himself accordingly.

"Done by order of the county court of Utah county.

"E. H. BLACKBURN,

"General Agent."

In this connexion I think it proper to say that no permission was asked by me to go through the cañon, and no objection ever made, and this I believe has been the experience of all the government and contractor's trains which have passed over the route.

To resume my account of the route. Four miles from the mouth of the cañon is the first sufficiently wide place for a small command to encamp, and here will be found plenty of grass. Two miles further is the first sufficiently wide place for ox-teams to corral, and grass also exists here in abundance. Indeed, from this point as far as the

road extends along the Timpanogos, a distance of twenty-three miles, at short distances can be found most excellent camping places for the largest commands and trains. The river is well timbered from the mouth of the cañon up, and there is every other requisite needed.

As I have before remarked, the turnpike extends from the mouth of the cañon for a distance of twelve miles. Thence the route continues along the Timpanogos, crossing it about a mile above Wall's ranch, and through Round prairie for a distance of ten miles, when it enters another cañon, or rather narrow valley, four miles long, where the river is in places obstructed for about three miles by beaver dams, and where the road for a few hundred yards is rather soft. This cañon gone through, the route leaves the main Timpanogos, which here takes a sudden turn to the right, and passing along a small tributary, in $4\frac{1}{2}$ miles commences going up the divide between the Timpanogos and Silver creek, and in a distance of $1\frac{1}{2}$ miles, with a pretty fair grade and on rather a stony slope, reaches the top. The crossings of the Timpanogos, of which there are four, are all by good fords. The principal timber on the creek is the oak, cottonwood, box elder, sugar maple, birch, and willow. Pine and the fir tree are to be seen on the mountains. Currants, red and black, and a blue berry like the small winter grape, and which the Mormons call the mountain grape, is also found in considerable quantities in the valley.

In *Round Prairie*, near where Rattlesnake creek debouches from the mountains, on the north side of the valley, are to be seen a number of hot springs, the highest point the thermometer indicating in any one of them being $109\frac{1}{2}$ degrees. These springs well up from the surface, and, running over, deposit a residuum or tufa which accumulates about their mouths and forms tumuli, in one instance of about 60 feet in height and 200 feet in diameter at base. These tumuli are hemispherical in some instances, and in others conical, and after attaining a certain height the water ceases to flow, and they begin to disintegrate, and eventually are lost in the general level of the country. For several miles the substratum, for a depth in some places of 60 feet, as far as could be discovered, was composed entirely of this calcareous rock, and there is no doubt it is entirely due to an origin of the same sort. Rattlesnakes abound about these springs, and in a warm summer's day you cannot tread near some of them without hearing their sharp rattle. Traces of coal are to be seen in the lower cañon near its mouth, and the guide informs me that he has picked up specimens in the creek, which on that account has been called Coal creek. The Timpanogos valley is remarkably well watered, and the traveller will be greatly pleased, particularly on a hot summer's day, with the many cold, gushing, pure streams which he will cross, all flowing into the Timpanogos.

The grass, particularly in *Round Prairie*, where there is a great deal of meadow land, is abundant; and I know no place where stock could be better fed, sheltered, and watered during summer and winter. Already have stock grazers gone into this valley and secured a considerable quantity of hay for the winter. The soil is, a great deal of

it, of excellent character. and, as it is capable of being easily irrigated I doubt not it will prove very productive.

From the top of the divide between Timpanogos river and Silver creek to White Clay creek, a distance of 24½ miles.

The road descends northwardly from the top of the divide between the Timpanogos river and Silver creek, into the valley of the latter, with a fair grade, and in two miles reaches Silver creek, along which it continues 3½ miles, until it intersects the old Parley's Park road from Salt Lake City. Here it becomes coincident with this road, and, leaving Silver creek, crosses, in an east of north direction, in six miles, the divide between Silver creek and Weber river, and, turning down the Weber, in 7½ miles, leaves the Parley's Park road, crosses the Weber at a good ford, and, continuing down it, reaches, in 5 miles, the mouth of White Clay creek.

Silver creek takes its rise in the Wahsatch mountains, and, after running a north of east course some 15 or 20 miles, falls into the Weber river, 3½ miles below where the road strikes the Weber. It is cañoned for 6 miles before entering the Weber, and in this distance is full of beaver dams, which, with the enclosing escarpments, prevents a wagon road being made through it. It is, however, practicable for pack animals, my party having passed through in this way. It is a beautiful, clear stream, of an average width of 10 feet, and one-half foot deep. Its bottom is of a clean silvery color, owing to the particles of quartz debris with which it is covered. Willows line the low banks, and, although the margin is rather soft, wagons can ford almost anywhere. The valley in which it flows is a shallow one, of a few hundred yards wide, but, covered as it is with luxuriant grass, and watered by a clear and beautifully flowing stream, it presents a pleasing prospect to the eye. The fuel for camps along it would be only the willow and wild sage, or artemisia. In a south of west direction, about five miles distant, is Snyder's saw-mill, situated on Snyder's creek, or, as Captain Stansbury calls it, Beauchemin's Fork. A considerable quantity of timber is transported from this mill to Salt Lake City, and a portion of it has been used in the building of Camp Floyd. The valleys of Snyder's creek and tributaries have a great deal of meadow land, and large quantities of hay are cut and cured upon it for the winter. I noticed herds of cattle and sheep grazing here. Last winter Mr. Harmon, who lives near Snyder's mill, says they had in the valley from two to three feet of snow, and when I passed through the valley the settlers were then cutting hay to provide for their animals during the severest portion of the winter. The mails, when in the winter they could not be carried over the Big mountain route on account of snow, have been carried over the Parley's Park and Weber route; and, in one or more instances, when the snow was such as to prevent the mail rider from getting over the divide between Silver creek and Weber river, he has successfully gone down the cañon of the former to the valley of the Weber.

Weber river discharges itself into Salt Lake, and has its sources in the Uinta mountains, from which it flows generally in a northwest direction. It is a rapid mountain trout stream, about 100 feet wide, $1\frac{1}{2}$ deep, and of rocky bottom. Commensurate with the location of the road along the river, a distance of $12\frac{1}{2}$ miles, the valley is from $1\frac{1}{2}$ to 2 miles wide, and is abundantly clothed with grass. Cottonwood lines the banks of the river, and cedar is to be seen very thickly sprinkling the side-hills. The soil of this valley is quite rich, and the land lies well for irrigation. It is a fine stock-grazing valley, fine meadows being seen all along it, and if not too cold, which is yet to be tested, will prove a good grain country. Already settlers are beginning to claim the land, and during the last summer there were persons harvesting hay upon it. The ground is good for a road through the whole section of it, and only requires causewaying at a single point, and that but for a very few yards.

From the mouth of White Clay creek to Bear river, a distance of thirty-four and a half miles.

The road leaves the Weber at the mouth of White Clay creek, (Morin's Fork, according to Stansbury,) and turning up said creek in a direction north of east, in $30\frac{1}{2}$ miles reaches the top of the divide between it and the sources of Yellow creek; and in four miles further, in the same general direction, after passing over two or three ridges of tolerable grade, reaches Bear river.

White Clay creek has its sources in the Uinta mountains; and at its mouth is about 20 feet wide and 1 deep, and has but one affluent of any volume, which you will please permit me to name in honor of yourself. Trout are caught in it. The road goes up along the creek for a distance of 19 miles, when, the creek suddenly turning to the right, the road continues on its usual course up a small branch of the creek. The creek is distinguished at its mouth by its whitish vertical outcrop of rocks on its north side. Indeed, this whitish clay color characterizes the rocks all along the creek, and is probably the source of its name. The rocks along the Weber river and Echo cañon are generally of a red hue. The valley, for three miles from its mouth, is over a mile wide; then the creek, for $\frac{1}{2}$ of a mile, is very narrowly cañoned. It then gradually widens to a breadth of several hundred yards, and between mountain heights on either side continues this breadth for 15 miles. At this point it is again cañoned for two miles, when it again opens out to a breadth of a few hundred yards, and continues this breadth to the divide between it and Yellow creek. Except in the cañons there is plenty of grass in the valley; and the table-lands and side-hills abound with it. This valley I regard as good for stock-grazing purposes, but not so good as either the Timpanogos or Weber valleys. The creek, for a distance of 21 miles from its mouth, is lined with cottonwood and willows, and the side-hills are covered with cedars. I found coal of fair quality in the bank of a grassy ravine on the north side of the creek, about six miles above its mouth; its character is bituminous, (see Geological Re-

port of Mr. Engelmann herewith.) Above the upper cañon willows alone fringe the creek. Beaver dams are quite frequent above the lower cañon; and these, with the cañons, make the road quite difficult to construct. The beaver dams force you upon the side-hills, where there is necessarily a great deal of grading; and when you are obliged to keep the bottom on account of the work on the side-hills being too severe, the foundation of the road is in many places found to be quite soft. The willows, too, are quite thick in some localities, and it is no little job to cut them down thoroughly. Water is found at intervals in holes above the point where the road leaves the main White Clay creek, for a distance of about five miles. Beyond this, until you reach Bear river, a distance of ten miles, there is no water. It will be noticed that there are two red lines on the map connecting White Clay creek with Bear river. That furthest south furnishes the best grade, and should be the one taken going east; the other, indicated by the broken line, is the shortest, and could be taken by trains going west. Between White Clay creek and Bear river there is plenty of grass at intervals; but the beds of the sources of Yellow creek are generally dry. Up to and inclusive of White Clay creek the road has been generally threading the valleys; but now that it leaves White Clay creek it crosses the streams and divides, and not unfrequently on that account is hilly. The hills, though long in some instances, are not steep.

From Bear river to Fort Bridger, on Black's Fork, a distance of thirty-six and a quarter miles.

From Bear river the road takes a general course of northeast, and crosses in three miles Cottonwood Fork of Bear river; in $5\frac{1}{2}$ miles, the West Fork of Sulphur creek; in $3\frac{1}{2}$ miles, the East Fork of Sulphur creek; in $11\frac{1}{2}$ miles, the Muddy Fork of Black's Fork of Green river; and in $13\frac{1}{4}$ miles, through the ravine which Major Whiting took to the south of the Big Butte, reaches Fort Bridger—making the whole distance from Camp Floyd 155 miles.

Bear river is a noble, swift stream of pure water, flowing over a rocky bottom, and has its sources in the Uinta mountains; from which after running in a direction west of north for about two degrees of latitude, it turns quite sharply to the south, and running west of south one degree of latitude, it disembogues into the Great Salt Lake. Its width varies from 30 to 75 feet, and at the ford is about 2 feet deep. My party caught some fine trout in it. A grove of cottonwood and willows, interspersed with some fir trees and pines, characterize it at the crossing. An abundance of grass is to be found on this stream as well as on the Cottonwood branch, which is also a rapid stream 20 feet wide and one half foot deep; bottom stony; ford good. Some cottonwood trees border it.

The *valley of Bear river*, where the road crosses it, is 4 miles wide and about 12 long, and lies quite flat. Its soil is agillaceous and in places gravelly. It lies well for irrigation; and no doubt a portion would prove productive if the locality were not too cold.

The *valley of the west branch of Sulphur creek* is about 4 miles wide, quite level, and is covered with the wild sage. There is no water in the branch above the road, and, indeed, none below of any account till you reach the junction of the east and west branches. The valley, therefore, can never be of any value for agricultural purposes, as it cannot be irrigated.

Crossing the divide between the east and west branches of Sulphur creek by a gentle grade you reach the shallow valley of the east branch, where you find water in holes, or rather springs, grass abundant, and no fuel but wild sage and willows. Here the road becomes coincident for about a mile with the old Fort Supply road, when it leaves it and takes over the divide by a long tolerable ascent, and then descends by as long a slope, not exceptionable, through a shallow ravine, to the Muddy. This ravine abounds in excellent grass, and at intervals has some fine springs. A large number of cattle was herded there in the summer and fall. It is, however, not sheltered sufficiently in the winter, though stock might take refuge in case of storms among the willows on the Muddy. The only fuel along the ravine is wild sage.

Muddy Fork, at the crossing, is but three or four feet wide and one deep, and this water it receives from the small affluent which joins it just above the crossing. Above the junction water is to be found only in holes in the main branch. The valley of the Muddy is a few hundred yards wide; the creek is lined with willows and occasionally with cottonwood, and the grass along it is tolerably abundant. From the Muddy the road goes up a rather steep ravine to a high table land or plateau, over which it runs five miles, when it descends by a ravine to the south of the Big Butte, and in $7\frac{1}{2}$ miles reaches Fort Bridger. The plateau is covered with wild sage, and the soil is somewhat gravelly and in some places stony. Water is to be found alongside of the road within six miles of Fort Bridger, and some grass in the vicinity.

General remarks.

The black dotted lines, as well as the red lines, indicate the country traversed by me in looking up the best route for the road. All these are practicable for wagons, except that down the cañon of Silver creek; that from the Parley's Park road to the Weber, just below the junction of its two forks; and that from the Timpanogos valley and across Kamas prairie and the divide to White Clay creek. The reconnaissance across Kamas prairie to the Timpanogos was made with the view of cutting off the detour by the mouth of White Clay creek; but the route was found barely practicable for pack mules. The ascent from White Clay creek and descent to the Weber, and the descent from Kamas prairie to the Timpanogos valley, were found entirely too steep for wagons. Grass is abundant on Kamas prairie, and already have large quantities of hay been cut upon it. A very considerable portion of the soil is the product of beaver dams, and this portion is very soft. We noticed, when we crossed the prairie,

that some hay which had been cut had, during the absence of the mowers, been submerged by the water of the creek; all the work of the busy beaver. The streams coursing through the prairie are voluminous and the land lies well to be irrigated by them.

On reaching Fort Bridger, after my first reconnoissance, I offered to bring the column of Utah forces, commanded by Lieut. Col. Morrison, through to camp Floyd; but the colonel, believing that he had not the necessary authority, declined. Mr. Henry Engelmann, geologist of the topographical party, having arrived at Fort Bridger the same day I did, I directed him to accompany me on my return to Camp Floyd.

Before entering upon my report in relation to the opening and construction of the route, I think it proper to bear testimony to the very efficient manner in which Lieutenant Ferguson, in charge of the escort, performed his duties. Though a graduate of but one year's standing, he discovered an energy, firmness and sensibility which will make it his own fault if he does not win still higher laurels in his profession.

Opening and construction of the road.

In the foregoing remarks I have said little in relation to the portions of the road where labor would be required to make it practicable for wagons, for the reason, as I have before stated, that the work has already been done; and, as I intended to make a report upon this portion of my duty, I have left it to be introduced in the following pages.

On the 14th of September I had the honor to receive the following orders:

Special orders, No. 84.

[Extract.]

HEADQUARTERS DEPARTMENT OF UTAH,
Camp Floyd, U. T., September 14, 1868.

* * * * *

4. A detail of one officer, five non-commissioned officers, and fifty privates, to march on the 16th instant, will be made from the infantry portion of the command in the camp, to be employed on extra duty in the quartermaster's department, under the direction of Captain J. H. Simpson, Topographical Engineers, charged with opening a road by the Timpanogos river, White Clay creek, &c., to Fort Bridger. The party will be provisioned for 25 days.

The depot quartermaster will furnish all necessary transportation above that which can be supplied from the garrison, and all the tools required.

A like detachment of one officer and 30 men will, on receipt of the order, be put in motion by the commander of Fort Bridger, to work

the road from that point to connect with the party from this camp. This detachment will be provisioned for 20 days.

The depot quartermaster at Fort Bridger will supply the necessary tools.

The guide who accompanied Captain Simpson over the projected route will be directed to report at Fort Bridger as guide to this party.

By order of Brevet Brig. Gen. A. S. Johnston.

F. J. PORTER,
Assistant Adjutant General.

In accordance with the above the following orders were issued :

Special orders No. 22.

HEADQUARTERS, CAMP FLOYD, U. T.,
September 15, 1858.

I. Pursuant to special orders, No. 84, from the headquarters department of Utah, of the 14th instant, the following detail for extra duty is made:

From the 5th infantry: 1 sergeant, 2 corporals, and 28 privates.

From the 7th infantry: 4 privates.

From the 10th infantry: 1 sergeant, 1 corporal, and 18 privates.

Second Lieutenant A. T. A. Torbert, 5th infantry, will command the party, and will report in person to-day to Captain Simpson, Topographical Engineers, and will immediately take measures to procure the tools, subsistence, &c., for his party.

II. The regimental quartermasters will each furnish two wagons, and the depot quartermaster one.

III. Pursuant to special orders, No. 85, headquarters department of Utah, of this date, Assistant Surgeon Joseph C. Bailey, medical department, is assigned to duty with this detachment. He will report to the commander of the detachment, Lieutenant Torbert, for instructions.

By order of Brevet Colonel C. F. Smith.

CLARENCE E. BENNETT,
Second Lieutenant 10th infantry, Adjutant.

At Fort Bridger were issued the following orders:

Special orders, No. 77.

HEADQUARTERS, FORT BRIDGER,
September 22, 1858.

A working party of 1 officer, 3 non-commissioned officers, and 27 privates will proceed to-morrow morning on the new road to Utah valley.

The party will be provisioned for 20 days, and will take only the necessary camp and garrison equipage.

The depot quartermaster will furnish the transportation, (three wagons,) tools, and common tents required by the party.

The dragoons (mounted) will be detailed.

By order of Lieutenant Colonel Canby.

W. R. PEASE,

Second Lieutenant 7th infantry, acting adjutant of post.

The officer detailed under the foregoing orders was Lieutenant E. C. Jones, 7th infantry, who received from Bvt. Lieut. Col. Canby, commanding Fort Bridger, the following detailed instructions:

HEADQUARTERS, FORT BRIDGER, U. T.,

September 23, 1858.

SIR: Your party has been detailed, under instructions from the headquarters of the department of Utah, to work the new road from this place to Utah valley, by the way of the Timpanogos, or Provo river, and to render it practicable for heavily-loaded trains.

The route for this road has already been selected by Captain Simpson, Topographical Engineers, and Mr. Bullock will accompany you as a guide to point out the route selected. The other end of the road is now being worked by a party from Camp Floyd, under the direction of that officer, and the two parties will probably meet in White Clay creek, about fifty miles from this point. As the whole road is under the superintendence of Captain Simpson, you will report to him when the parties meet for instructions.

Until you meet him, the essential condition of a road practicable for heavily-loaded trains (the contractors', for instance,) will govern you in working the road, avoiding as much as possible all steep grades, short turns, stony grounds, &c.

You will be careful to mark the road by stakes, or other suitable means, when the trail is indistinct, or when from any other cause there is a liability to mistake. The crossings of other roads will be distinctly marked by guide posts, and the proper direction plainly indicated. Where the trail of the 5th and 6th columns diverges from the right road you will, in addition, place some obstructions on the trail. The means of marking the road should be taken with you.

Your party will take their arms, 20 rounds of ammunition, knapsacks, and the camp and garrison equipage only that may be absolutely necessary.

Your party will be reported upon extra duty in the quartermaster's department, and will be entitled to extra pay if employed for more than 10 days.

You will, accordingly, keep the prescribed rolls. Three dragoons (mounted) will be attached to your party for express purposes, &c. You will please report by them any difficulties or unusual occurrences.

Very respectfully, sir, your obedient servant,

EDWARD R. S. CANBY,

Major 10th infantry, &c., commanding.

First Lieut. E. C. JONES,

Seventh infantry, commanding working party.

In the due course of events I received from Lieutenant Colonel Canby the following letter:

HEADQUARTERS, FORT BRIDGER, U. T.,
September 21, 1858.

SIR: The working party for the new road will leave to-morrow morning, under the direction of First Lieutenant E. C. Jones, 7th infantry. The party is not so fully supplied with tools as I consider desirable, but there are very few at the post, and none can be purchased in the neighborhood. I shall be obliged to suspend a part of our work here, in order to supply those that they will take with them. I hope that there will be enough to meet their wants in this case.

Very respectfully, sir, your obedient servant,
EDWARD R. F. CANBY,
Major 10th Infantry, Commanding.

Captain J. H. SIMPSON,
Topographical Engineers.

Agreeably to special orders, No. 84, of September 14, given above, I left Camp Floyd September 16; Lieutenant Torbert in command of the working party, consisting of 5 non-commissioned officers and 50 privates, and Assistant Surgeon J. C. Bailey having been assigned to duty with the detachment. Five wagons transported the provisions and baggage of the party, and the necessary tools. In the afternoon we encamped at Lehi, a distance of $16\frac{1}{2}$ miles from Camp Floyd. No work required on the road.

September 17.—The party to-day reached as far as half a mile above "Beautiful Cascade," in Timpanogos river cañon. I left in the morning for Provo, to engage the guide, Mr. Isaac Bullock, to convey the working party from Fort Bridger. Was successful, and after instructing him by letter to report to Lieutenant Canby agreeably to special orders, No. 84, I returned to the camp of my party the same night. Distance from Lehi, 17 miles.

September 18.—Nothing required to-day till we reached the second crossing of the Timpanogos. Here I materially improved the ford by locating it a quarter of a mile above, and bargained with Mr. Bean to open and grade the approaches for ten dollars, it to be finished by the time we returned. The party improved the crossing at Dry creek, and graded the banks of a creek which I have called Torbert creek, in honor of the commander of the working party. Encamped on this creek, having travelled $13\frac{1}{2}$ miles.

September 19.—The work to-day consisted in grading the banks of a creek which I have called Bailey's creek, in honor of the assistant surgeon with us; in grading Coal creek, and doing considerable earth work in the cañon just above and at the crossings of the Timpanogos, and at other points, and in widening the old road which had been but partially cut through the timber. Encamped on Michey's creek, so called in honor of Mr. Michey, who was in company with us to examine the road for Messrs. Russell & Co., contractors, and divert, if found practicable, their trains upon it. Day's journey, $10\frac{1}{2}$ miles.

September 20.—Improved some of the crossings of a couple of small meadow streams, and effected some side cutting on the divide between the Timpanogos and Silver creek. Encamped on Silver creek where the Parley's Park road intersects it. Day's travel, 10 miles. It was in this valley where we first met the command of Major Whiting from Fort Bridger, on its way to Camp Floyd. They had come mostly on my route to this point, but not knowing that it left the Parley's Park road and turned up the valley of Silver creek, they had crossed my track and were proceeding to Salt Lake City on the Parley's Park road. It appears that the guide, Mariano, had been instructed at Fort Bridger to follow my trail, but not getting on it at the start he had conducted the command much too far to the south, they having encamped the first night on Black Fork. He struck the trail subsequently about 10 miles to the east of Bear river, and had kept right till he reached Silver creek. I here diverted him on the new route again, and furnished him with an itinerary to Camp Floyd. We were glad to meet the troop, and especially to learn that they had done a great deal of work in White Clay creek, the most difficult portion of the road.

September 21.—Engaged in grading and bridging the gullies which cross the route on the divide between Silver creek and the Weber river, and also in some side hill excavations. Encamped on the Weber, $1\frac{1}{4}$ mile above the mouth of Silver creek. Day's journey, $8\frac{1}{2}$ miles; having met between Silver creek and the Weber Major Paul, 7th infantry, who had also come with his command partially over my route, in the track of Major Whiting. Furnished the major with an itinerary to Camp Floyd.

September 22.—Improved the ford of the Weber where Major Whiting had crossed, by changing its approaches, thus making the ford narrower and the road shorter. The banks, also, of the first crossing of White Clay creek, near where we encamped, were graded. Day's travel, $11\frac{1}{4}$ miles.

September 23, 24, 25.—Two and a half days spent in cutting through a thick growth of willows and brushwood, in side hill excavations, and in gradings of White Clay creek in the first cañon. The road here crosses the creek in $\frac{3}{4}$ mile seven times, rendered necessary on account of narrowness of the cañon and the impossibility of getting a practicable grade on the bluffs. Major Whiting excavated a road on the side of the north bluff sufficient to enable him to get up with his wagons, but the grade is entirely inadmissible for heavy teams. The remaining portion of the third day was employed in changing the road as followed by Major Whiting, and thus avoiding two hills, one of which we had to double up. Considerable cutting through timber and brush was also effected. The major's command having been rationed for but a short period, the guide not being perfectly assured in respect to the route, and the troops not having come on the road expressly to make it, the major was anxious to get through, and only did that which would enable him to accomplish Day's journey, 3 miles.

September 26.—Progressed only $1\frac{1}{4}$ mile, in consequence of the

necessity of diverting the road as made by Major Whiting on side hill, where there are some boggy springs, to the river bottom, where there was a good deal of cutting of willows, and some grading at the crossing of streams was required. Delayed also by a rigid reconnaissance along the valley, rendered necessary for the reasons mentioned, and because the valley at this point is full of beaver dams.

September 27.—Several hours consumed in altering and improving a ford of White Clay creek. Bettered it materially by finding out the beaver dam which dammed up the water and tearing it down. The remaining portion of the day was spent in side-hill excavations. Have-to-day made only 2 miles.

September 28.—Did not move camp to day. Party engaged in grading hill back of camp. This is the worst hill in White Clay creek valley, and is about $9\frac{1}{2}$ miles from its mouth, or about $4\frac{1}{2}$ miles above the lower cañon. Lieutenant Torbert and myself made an ineffectual attempt to evade the hill by getting through the bottom, but the numerous beaver dams prevented it.

September 29.—Sent an express to the upper cañon of White Clay creek, ten miles above, to see if Lieutenant Jones and working party had arrived from Fort Bridger. Reconnoitred in the morning for the best location for the road some six miles ahead. Dr. Bailey in company, and doing valuable service. Express returned about noon with a letter from Lieutenant Jones, who had reached the upper cañon last evening, and was now working the road in the bottom at that point. Express also brought the orders of Lieutenant Colonel Canby, detaching the working party from Fort Bridger, a copy of his instructions to Lieutenant Jones, and a letter from the colonel to me covering his orders. A copy of these documents has already been given. The following is a copy of Lieutenant Jones' letter to me:

SEPTEMBER 29, 1858.

CAPTAIN: I am now camped on the main branch of White Clay creek. I came on to Major Whiting's road about 7 miles back, and followed it to this place with my wagons to get a place to camp. But about one mile back his road struck over the hills. To get up I had to pull the wagons by hand, and let them down in the same way. My party are now working a road through the bottom. I think it will be better than Major Whiting's road; at least down this far.

My instructions are to report to you, which I now do. I send by bearer a letter and two papers from Colonel Canby.

Very respectfully, your obedient servant,

E. C. JONES,

First Lieut. 7th Infantry, com'g working party.

Captain SIMPSON,

Topographical Engineers, commanding party.

In the afternoon Major Prince, paymaster, arrived from Camp Floyd on his way to pay the troops at Fort Bridger, and gave me your note, desiring me as soon as my duties on the road would permit, and I had set the topographical party under Lieutenant J. K. L. Smith properly

to work on the survey of the military reserve at Fort Bridger, to return to Camp Floyd. as the general commanding wished me to make a reconnaissance west of that post, over the Great Salt Lake Desert. before winter.

September 30.—Party still employed in grading hill near camp, and making a bridge across ravine. I left for Fort Bridger; Lieutenant Torbert accompanying me as far as Lieutenant Jones' camp, in order to look over the road with me and receive instructions. He returned to his own camp the same afternoon. I examined the work done by Lieutenant Jones in the bottom of the cañon, and went over a portion of the route with him to point out the best location. At this locality Major Whiting ascended the left or south bluff of the cañon by a very steep hill, and descended again by as steep a one; indeed, so steep was the ascent of the latter, that it required my teams to be doubled, and in addition the assistance of Lieutenant Jones' party to push the wagons up. The road, therefore, here, has been cut through the willows in the river bottom. I encamped for the night with Lieutenant Jones.

October 1, 2, and 3.—Arrived at Fort Bridger about noon, October 3; but little work has been required between White Clay creek and Fort Bridger. The principal is the causewaying the slough just after crossing Bear river, the grading of the hill four miles beyond, (or east) and the grading of the ravine immediately from the Muddy Fork to the table land beyond, (or east.)

October 4.—The day spent in examining the accounts and paying some of the party.

October 5.—Severe rain all day; engaged in writing letters and giving instructions to Lieutenant Smith in relation to the survey of the reserve.

October 6.—Left for headquarters, department of Utah; Mr. Engelmann, geologist, in company. Passed, since October 2, several contractors' trains, going in whole or in part on the new route, to all of which I furnished itineraries. Met Lieutenant Jones October 8, near the head of White Clay creek, on his return to Fort Bridger; reiterated orders about bad crossings requiring to be graded more, and specifying some of them. Directed him to "corduroy" or log the slough before referred to, to the east of Bear river, and also, if he had time, to make the side-hill excavations marked out by me for him on the tongue of land four miles to the east of Bear river. On passing down White Clay creek found that Lieutenant Torbert, according to my instructions, had changed the road from the bluff, at the mouth of the creek, to the river bottom; had materially improved the road upon the divide between Weber river and Silver creek, and also elevated two bad fords of the Timpanogos, and otherwise improved the road in the upper cañon of that river. Met three contractors' trains which had come on the new road from Echo cañon. Overtaken Lieutenant Torbert and party at American Fork settlement, on his way back to Camp Floyd. Encamped with him for the night, and the next day the whole party reached Camp Floyd.

Comparison of the new and old route by Echo cañon.

The only wagon route from Fort Bridger to the valley of Great Salt Lake City which the people of this Territory, emigrants to and from California, and Indian traders have, up to the opening of the new route, been in the habit of travelling, has been that by Echo cañon and the Big and Little mountains.

This route has always been very objectionable, both on the score of the deficiency of grass and its exceedingly rough, mountainous character; but as there was none other than that by Soda Springs, which required a detour of about one and a half degree of latitude out of the way, there was no alternative. The new route, however, which I have opened, has no such hills or mountains to go over, and the grades of the divides, generally, are very fair for a mountain road. In point of grass and water it is far superior to the old road; and in respect to fuel, equally good, if not better. The consequence has been, that since the opening of the road nearly all of the government as well as contractors' trains have been travelling it, in whole or in part, in preference to the old one. The agent of the contractors, Messrs. Russell, Major & Co., (Mr. Garrison,) has informed me that some of the trains left Fort Bridger by the new route after others which had taken the old, and the former had reached Camp Floyd and been discharged before the arrival of the latter. There is no doubt that a great deal of draught and beef stock has been saved by the opportune opening of the new route, and to it I think must be attributed no little portion of the success which has attended the efforts of the contractors in getting in their trains before winter. The route, then, is a good one for bringing pack animals and herds of cattle into the Great Salt Lake valley *early* in the spring and *late* in the fall.

Work to be done upon the road next spring.

The working parties under Lieutenants Torbert and Jones were successful in opening the road and making it passable, but still the short period for which they were provisioned did not permit them to do all that was required to make it such as it ought to be. Besides, the teams which have gone over the road have very much cut it up in places, on account of its being new. I would therefore respectfully suggest that working parties, from both extremes of the road, be ordered early next spring to repair it, and put it in the condition it should be. The points which would require special attention are the soft bottom in the upper portion of the upper cañon of Timpanogos river; the divide between Silver creek and the Weber, particularly the sideling place near the Weber; the causewaying of a few yards between the crossing of the Weber and White Clay creek; the bridging of a little miry stream near Porter's creek; the causewaying the bottom of White Clay creek over some beaver dam land, or carrying the road on the table land, or side hills, as might be deemed

best; the causewaying or bridging the slough just beyond Bear river; and the grading of the tongue of land four miles beyond, which Lieutenant Jones was instructed to effect, but which, in all probability, the expenditure of his rations did not permit him to accomplish, and the grading of some of the hills toward Fort Bridger.

Connexions with the old road.

The new road connects with the old by the Parley's Park road down the Weber to the mouth of Echo cañon, in a distance of five miles; also by the Fort Supply road down Sulphur creek, a distance of $3\frac{1}{2}$ miles; also down the Muddy Fork in $3\frac{1}{2}$ miles. The two first connexions have been in frequent requisition by the trains since the road was opened.

Military features of the route.

These are mainly the lower cañon of the Timpanogos and the two cañons in White Clay creek. These cañons, on account of the impossibility of commanding them from adjacent heights or turning them, are points of prime importance in keeping the road open to our troops, or obstructing it to an enemy.

They, therefore, in case of an emergency, should be the first points seized and fortified. In this connexion, and as conducive to the same end, an excellent position for a post would probably be on the valley of Utah Lake, near the mouth of, and upon the Timpanogos river. The valley of the Timpanogos would prove valuable for stock grazing, and frequently, as I think, all winter, and the position would be such as to command the valley.

The water is pure and abundant, and wood can be obtained near. Should it be the intention of the government ever to occupy this position, the whole of the valley of the Timpanogos should, in my opinion, be a part of the reserve. The necessities of the post in reference to wood and grass would seem to require it.

Another excellent position would be in Weber valley, possibly midway between the mouth of Echo cañon and that of White Clay creek, or, at any rate, in the vicinity of the mouth of White Clay creek, above or below it, in the valley of the Weber. Such a position would be at a striking distance of the defiles of both of these cañon creeks; and as grass, wood, and water abound in the vicinity, there would be every facility for the erection and maintenance of such a post. The reserve about the post should include a large portion of the Weber valley, and also the whole of White Clay creek valley.

Complimentary.

In concluding this portion of my report, it would do injustice to my feelings if I did not bring to the notice of the commanding general the very efficient aid I received from Lieutenant Torbert, the officer in immediate charge of the working party. Ever prompt in ex-

tion, I found him no less judicious in the application of the labor he commanded; and it is a gratification to me that I am enabled to make this honorable mention of him. I have also to acknowledge the valuable assistance I received from Assistant Surgeon Bailey, who was always ready to aid in any mode which might further the work. I also believe it my duty to mention the zeal and good judgment displayed by Sergeant Kopp, company G, 5th infantry, the non-commissioned officer in charge of the party, in the discharge of his duties; as also worthy of special commendation the able, industrious, and persistent manner in which the two privates, J. McConnell, company C, and Flannery, company G, 10th infantry, did their work. The men generally did their work manfully and well, but those two are worthy of special remark for their superior industry and energy.

Itinerary.

Appended will be found an itinerary, marked B, of the new route from Camp Floyd to Fort Bridger, giving all the necessary information in relation to wood, water, and grass.

Exploration southwest of Camp Floyd.

HEADQUARTERS DEPARTMENT OF UTAH,
Camp Floyd, U. T., October 15, 1858.

SIR: As preliminary to more extended examinations in the spring of the country west of Rush valley, in order to ascertain its facilities for grazing purposes and the practicability of opening a road for general travelling direct from the camp to Carson valley or the lower parts of the Humboldt river, the commanding general directs that as soon as the necessary arrangements can be made for carrying out his wishes, you proceed to the examination of the country designated, passing from Rush into Skull valley by the cañon connecting the two near Johnson's settlement, on Clover creek, and extending your explorations as far as you deem it prudent to venture, considering the condition of your animals and the lateness of the season.

From the base of the bench lands in the east of Skull valley to the Goshoot mountains, (about 50 miles,) the country is represented as a vast clay flat, destitute of vegetation and water, except about midway, at the Granite mountains, and in the spring almost impassable for wagons. Anticipating that a practicable road during the travelling season will be found on the southern rim of this basin, the commanding general wishes you on your outward journey to avoid as much of this mud flat as possible, and examine the bench lands to the south, especially with regard to facilities for grazing; and if you think a good natural road possible and advantageous, to ascertain the practicability of obtaining water by sinking wells if needed.

The commanding general authorizes you to employ a few laborers and guides, and also an interpreter, as the country you will be able

to explore this fall is occupied by bands of Indians, many of whom are represented as hostile to the settlers in this country. You may also procure through him much useful information from the Indians in regard to other bands, as well as of the country.

It is in contemplation to establish a military post on the most eligible road to California, and it is in the view of ascertaining the eligibility of this route that the exploration is directed.

I am, sir, very respectfully, your obedient servant,

F. J. PORTER,
Assistant Adjutant General.

Captain JAMES H. SIMPSON,
Topographical Engineers, Camp Floyd, U. T.

Special orders, No. 103.

HEADQUARTERS DEPARTMENT OF UTAH,
Camp Floyd, U. T., October 18, 1858.

An escort of one officer and thirty-five men (1 non-commissioned officer and 10 dragoons and 3 non-commissioned officers and 21 infantry) will be furnished by the commander of Camp Floyd to Captain James H. Simpson, Topographical Engineers, charged with the exploration, for special purposes, of the country west of Skull valley.

The detachment will be rationed for 25 days from to-morrow morning, when it will march. The officer designated will immediately confer with Captain Simpson on the arrangements for fitting out the party. The chief quartermaster will direct the transportation, tools, &c., to be furnished on estimate by the officer.

By order of Brevet Brigadier General Johnston.

F. J. PORTER,
Assistant Adjutant General.

Special orders, No. 46.

HEADQUARTERS, CAMP FLOYD, U. T.,
October 18, 1858.

[Extract.]

I. In compliance with special orders, No. 103, dated headquarters department of Utah, October 18, 1858, First Lieutenant Gurden Chapin, 7th infantry, with one non-commissioned officer and 10 privates from the 2d dragoons, and 3 non-commissioned officers and 10 privates from the 7th infantry, and one non-commissioned officer and 11 privates from the 10th regiment of infantry, will constitute an escort to Captain Jas. H. Simpson, Topographical Engineers, charged with the exploration, for special purposes, of the country west of Skull valley. The detachment will march to-morrow morning, and be rationed for 25 days. Lieutenant Chapin will confer immediately with Captain Simpson on the arrangements for fitting out the party, and make estimate on the chief quartermaster for transportation, tools, &c.

The non-commissioned officers from the dragoons and 10th infantry and the senior non-commissioned officer of the 7th will report to Lieutenant Chapin at 12 o'clock.

* * * * *

By order of Lieutenant Colonel Morrison.

EDW'D J. BROOKS,

Second Lieutenant 7th Infantry, Adjutant.

I left Camp Floyd, agreeably to the above orders, at 10 o'clock a. m. October 19, First Lieutenant Gurden Chapin, 7th infantry, in command of the escort, consisting of one non-commissioned officer and 10 dragoons and 3 non-commissioned officers and 21 infantry. The subsistence and camp equipage of the party were transported in five wagons, and my astronomical instruments in an ambulance. Mr. Henry Englemann accompanied me as geologist, and Mr. William Bean was our guide. Our course for the first 2½ miles lay a little south of west, up a gentle ascent, in Cedar valley, to the plain pass between Cedar and Rush valleys, which pass I call Camp Floyd Pass, on account of the proximity of the post of that name. Thence turning gradually more westwardly around the point of the Oquirrah mountains, which bound the pass on its north side; in a distance of two miles the route gets into Rush valley, and our course for 11½ miles lay to Meadow creek, where we encamped. Day's travel, 17 miles. *Cedar valley*, so called by the Mormons, *Oquirrah valley* by the Indians, in which Camp Floyd is situated, is an open flatly concave valley, running north and south about 25 miles, and averaging a breadth east and west of about 8 miles. Mountains encompass it, more or less, on every side, though in the northeast and southeast extremities, as well as at the middle of its western boundary, there are passes through which there are good wagon roads into adjoining valleys. The land slopes uniformly with gentle grades from the base of the mountains to the middle portion of the valley, and everywhere the indications are that at one time it was covered with water, and constituted, with other valleys I shall describe, a portion of the Great Salt Lake. The *artemisia*, or wild sage, cover it everywhere, though grass is to be found intermingled with it in patches in the valley, and tolerably abundantly along the benches and sides of the mountains and in the cañons. Cedars and pines are to be seen interspersed upon the mountain slopes. Water is to be found at several points in the valley, the sources being gushing springs, which send out the fertilizing element in considerable volume. Camp Floyd is situated in this valley, about midway north and south, and about three-fourths of the distance across from the east side. Rush valley lies directly west of, and is next to, Cedar valley, and, like the latter, it lies nearly north and south, being about 30 miles long in that direction, and 15 east and west. It is bounded by a high range of mountains both on its east and west side; on its north by a short low range of mountains, which, however, does not extend up to the range on the coast side, thus leaving a passage way in that quarter through which a wagon road runs into Tula valley, and on the southwest by rather a low range of mountains, which make a sweep around from the west towards

the south, and then bears up northerly along the middle of the breadth of 15 miles, and terminates about the middle of the length of the valley. In the southeast angle there is a clear opening, which, at the distance I saw it, appeared several miles wide, but which I am told has a width of only about a mile, on account of encroaching hills. Lieutenant Tyler, 2d dragoons, who has been through this pass with pack animals, informs me that it is practicable for wagons. In the southwest corner of the valley there is a winding pass into Tintic valley, lying south and east of Rush valley, and into Servier valley, lying south of Rush valley. On the west side of the valley there are two wagon road passes, one towards the northwest end of the valley, the other about the middle of the west side of the valley, and both leading into Skull valley, lying directly west of Rush valley. These two last passes will be mentioned again in the course of my journey. The soil, like that of all the valleys, is areno-argillaceous, and wild sage and greasewood everywhere prevail. Grass exists abundantly on the benches and slopes of the mountains, and in the cañons, and along the streams, which are to be found in different portions of the valley, running generally from south to north for a distance and then sinking. Cedar and scrub pines cover the mountain sides. The soil of Meadow creek, where we are encamped, is saline, and though doubtless it affects the grass somewhat, it does not, however, seem to affect the water. The government has a herd of cattle at pasture in the southwest corner of the valley, protected (in December) by a temporary camp of troops, and towards the northwest end of the valley, on Clover creek, near Johnson's settlement, a large herd of mules, also protected (in December) by a camp of troops. This valley, like Cedar valley, gradually declines from the base of the mountains to the middle of the valley, and shows a kind of water line, indicating that at one time it must have been submerged. Its name is said to have been derived from the rushes about the small lakes at its northern extremity. These lakes are included in the small military reserve laid off in the quarter by Colonel Steptoe, of the army. Southwest of our camp I notice a pass, (already referred to,) which bids fair to be practicable for wagons, into Skull valley, and it is in my direct course, (see map to the Goshoot mountains, whither I am tending;) but as I might fail to get through, and it might then detain me on my outward route I think it best to defer a reconnaissance of it until my return.

Camp No. 1, Meadow creek, October 20.—Thermometer at sunrise 13 degrees above zero. The snow which fell a few days ago is covering the mountain tops and sprinkled upon the mountain sides morning bright and cold. The wolves last night disturbed us a great deal by their howling, having been drawn near the camp by the dead animals lying around. Struck camp 7½ o'clock a. m. Our course lay for the first 8¾ miles about northwest to within one quarter of a mile of Johnson's settlement, on Clover creek; thence more westward up Clover creek for about a mile, when we crossed it, and in ten miles further, still continuing up the creek, we reached another hot spring, the source of the creek, where we encamped at 10 o'clock.

p. m.; day's journey 13 miles. The creek is 5 feet wide and one deep and quite rapid, and just before reaching Johnson's settlement has been diverted almost entirely to an acequia for the purpose of irrigating the fields about the settlement. This settlement is a sort of hay ranch or stock farm. It was first settled by Mr. Johnson in the fall of 1854. There are about 200 acres of good farming land along the creek, some of which has been fenced in and cultivated. Like all the land I have seen in the Territory, however, it must have the incessant labor of irrigation applied to it to make it yield. The settlement is composed of 15 small log-houses. The Indians, the inhabitants informed me, burnt three of the tenements last spring, and they believe it to have been done by the Goshoots. Population of the place 100 persons, "big and little."

There is a good wagon road from here to Tuillah, in the Tuillah valley, 7 miles distant, and to Salt Lake City, 53 miles distant, running through the military reserve at the head of Rush valley and by way of the pass at the northern end of the Oquirrah mountains. I saw in this village two Goshoot Indians (young warriors) and an old woman, who, as usual, was made the pack animal of the party. The warriors were each well clad and armed with a rifle. Their manner appeared impudent and presuming towards the Mormons with whom they were conversing, and with hands full of bread, which, doubtless, they had levied upon some frightened citizen. They acted and talked as if they were entitled to anything they might ask for. The carriage of the Mormons towards them I thought submissive and provocative of the very thing they would most deprecate, an attack upon them. For the last three miles our route has been ascending up the valley of Clover creek in order to thread the cañon or pass, before referred to, into Skull valley. The narrowest portion of the valley thus far is about 100 hundred yards wide, and there are three or four sidling places, each of short distance, which, if ever the route should be much travelled with wagons, ought to be made level transversely. Our camp ground to-day is delightful. The spring near us sends out a copious volume of pure water; willows and wild cherry bushes shade it, and the side hills and benches of the valley in the vicinity are covered abundantly with the finest bunch grass and cedars.

Camp No. 2, Spring head of Clover creek, October 21.—Thermometer at 6½ a. m. at 30½°; marched at 8¼ o'clock. Course generally westwardly through a pass into Skull valley, already referred to, which I call Reynold's Pass, in honor of Major John F. Reynolds, third artillery, who encamped here in the spring of 1855, and who first examined it with a view to its practicability for wagons. In 1½ mile, the ascent pretty steep, we reached the top of the divide, and in about 5 miles more, with about as steep a descent, we debouched into Skull valley, it having been necessary to work the valley in several places. Upon the ascent there are two or three quite sideling places, of short extent, which ought to be graded. The descent to Skull valley is the most difficult portion of the pass. Along it is a narrow gorge about 300 yards long, which at one place is not more than ten feet wide. The narrowness of the gorge, together with its short turns, made it

necessary for us to take out all the mules except those at the wheel; and even then it was with considerable difficulty we got through; besides, at these places the descent is by steps, which would make it entirely impracticable for loaded wagons to go east through the pass. The pass, in fact, is impracticable for heavy trains going either way, and the blasting which would be required to make the road practicable would be quite considerable either way. The rocks of the enclosing wall are a silicious limestone, some of them looking like white marble. Generally, however, they are of a bluish color and impure character. The cañon, after leaving the last narrow gorge, widens to about a hundred yards. Cedars grow on the slopes, and a mile before you debouch into Skull valley, among some poplars on your right, in an arroyo, there is occasionally, the guide informs me, water, though there was none when we passed, and therefore it is not to be relied on. Just before you debouch into the valley, the Great Salt Lake Desert, of which Skull valley is a part, bursts upon your view, traversed immediately in front or west of you by short ranges of mountains, some 35 miles off; in the southwest direction by the famous Granite Mount; and about 60 miles off, in a southwest direction, by the Goshoot mountains. At the north the valley appears to be uninterrupted as far as the Great Salt Lake, and at the south it is hemmed in, more or less, by mountains, which tend southwardly for a distance of 25 or 30 miles, and then apparently approach each other, leaving openings between them into other valleys. This valley, like Rush and Cedar valleys, presents the idea of a kind of basin with a low rim visible at its southern extremity. The descent thence being, though very gradual, towards the Great Salt Lake. The bench of the mountain through which we have just passed on its west side is abundantly supplied with bunch grass, and about 2 miles to the south of the pass there are some springs of slightly brackish water. A stock corral is to be seen in the neighborhood of these springs. My guide informed me that about 8 miles to the north of the pass, on the west slope of the mountain, is a fine stream of pure water descending from the mountain and sinking about mid-valley.

After getting out of this cañon our course lay about southwest 6 miles to Willow Swamp, where we encamped. Distance made to-day $11\frac{1}{4}$ miles. The lower portion of the road through the cañon, and until you get off the bench of the mountains, is very sandy. Soil of the valley argillaceous, of a whitish color, and covered with sage and greasewood. Abundance of grass about Willow Swamp, but of impure quality, on account of the alkaline nature of the soil. The water, however, does not seem to be affected by it. Willow and sage fuel. On account of the possibility of our not finding water to-morrow we have had our ten-gallon water-kegs filled.

Camp No. 3, Willow Springs, October 22.—The weather has been boisterous and threatening all night, and continues so this morning. Thermometer at $6\frac{1}{4}$ a. m. $47\frac{1}{2}$ degrees. It is astonishing to notice the effect of the whirls and gusts of wind upon the magnetic needle, or, more properly speaking, to see the action of the magnetic needle at the time these whirls and gusts are in development. The fact of

these disturbances appearing together does not necessarily point to the same cause producing both, but makes it strongly probable that the cause is one and the same in both cases. The needle, whenever these gusts and whirls are in exhibition, would stick either to the north or south end of the bottom of box, and no change of position could make it stir. Sometimes the effect would be to disturb the needle very much, and to make it point indifferently to any point of the compass. When, however, the gusts would cease the needle would act normally as usual. We moved at 7½ o'clock a. m. Our course all day has been very slightly west of south. For a few miles we followed the faint wagon track we have been on since we left Reynold's Pass, and which, the guide says, enters the Beckwith route at Reading Spring. This track, he informs me, was just made in 1855 by a party of Mormons under Deputy Marshall Wall, who went out in that year in search of the murderers of a party of emigrants by a gang of desperadoes under a man by the name of Carlos Murray. It has since been travelled by Sub-Indian Agent Armstrong, in his journey to the Goshoot Indians. Finding the track was taking us off our course we left it, bearing off more southwardly, and in thirteen miles from our last night's camp reached a shallow hollow, where, on account of some of our mules giving out, we were obliged to halt and encamp. The shallow hollow was selected on account of the protection it afforded against the cold wind. Here we have but little grass, no water except what we brought with us, and only sage fuel. There being indication of water in the mountain ahead, that is to the south of us, after giving orders for the encampment, I went off in search of it on its northeast side, but found none. The indications are still better further on the north side, which I will examine to-morrow. The distance travelled by the wagons to-day has been but 13 miles, on account of the low sand-hill ridges, which we commenced crossing 2½ miles this side of our last camp, and which intervened more or less all the way. We are now fairly on the Great Salt Lake Desert, and the indications are that it extends northwardly more than a hundred miles. The valley is quite level, like all we have passed over, up to the benches of the mountains, and it is covered with the *artemisia*. The soil continues of an arenous-argillaceous character, and the indications are of its having been at some remote period the basin of a lake. To the southwest and west the rocks appear of an igneous and sometimes scoriaceous character, and in that direction, by the sombre hue which they give to the valley, make it appear as if a gloomy vail or pall had been thrown over it. To the southward the mountains look more cheerful, and give evidences of grass, wood, and water. The desolation which pervades all nature in these deserts is extreme, and can never be appreciated until realized. No signs of man or beast meet the eye, and even the birds seem to avoid it in their aerial flight. We are obliged to-night to give our animals a half ration of oats and a couple of gallons of water from our little stock on hand.

Camp No. 4, Great Salt Lake Desert, October 23.—It rained slightly during the night. All hands up at 4 a. m., in order to get an early

start, and, if possible, procure water and grass. Thermometer, $4\frac{1}{2}$ o'clock a. m., 43 degrees. Started on our way as soon as we could clearly see; weather still cloudy and threatening rain. Gave Lieut. Chapin the course of the route, with directions to proceed with the escort and train until he should be directed differently, while I proceeded with the guide and a couple of dragoons to the north face of the mountain I examined yesterday in search of water. We had not gone more than four miles when one of the dragoons I had sent up to the foot of the mountain came towards us with such a rapid gait that I felt sure the long sought for element had been discovered: and so it turned out. He had, as he said, found a little water; but, on examining it, I soon ascertained, by digging a series of wells, it would answer the purposes of our command, and might be made to serve, by a series of troughs, one to receive the drainage of the one above it, a large number of animals. The spring is in an arrow pretty well up the bench of the mountain, and was in the midst of a growth of rushes, now removed, which, a little lower down, we found deposited, in considerable quantities, as calcareous petrifications in a very perfect state. The taste of the water is sweet and palatable. Bunch grass of a fine quality is to be found about the spring, and exists in great abundance all along the benches both on its east and north sides. Cedar crowns the side of the mountain. Finding it a good place to recruit our animals, I sent word to Lieutenant Chapin to bring up the command as near the spring as possible, with his wagons, and encamp. This circumstance will account for the sharp angle to be seen on the map of our to-day's route. It being perfectly practicable, however, to come with wagons from our camp to the spring, after allowing our animals to graze for about an hour. I set out, Mr. Engelmann, the guide, and a couple of dragoons in company, to continue our explorations along the face of the mountain further south in search of water, and to obtain a good point of view whence we might reconnoitre the mountains ahead. After going about three miles from the spring we attained a high point whence we could very well observe the mountains in our course and towards the west. At the south could be seen what Mr. Bean calls Kan-ne-ke-ki-be, or Horse mountain, (a Pawant word,) some 25 miles off. In this mountain, on one of the sloping benches, I could see with my reconnoitring glass indications of grass and water. South 75° west, 60 miles distant, could be seen over a low intermediate range, the Goshoot mountains; and north 75° west, about 25 miles off, the Granite mountain, nothing intervening between it and ourselves. Captain Beckwith found "a permanent spring of pure cold water" on the north extremity of this mountain, but very little grass; and Mr. C. N. Mueller, secretary of a Mormon company, informs me that he found a few brackish springs on the south side, and some bunch grass, sufficient for a few animals. He also informs me that, according to some California emigrants, some fine water is to be found in a ravine on the north side of Beckwith's route, opposite to the Granite mountain. In a direction north 65° west, and nearly one hundred miles distant, could be seen Pilot's Peak, the most notable landmark

on the horizon, and the extreme western limit of Captain Stansbury's exploration of the Great Desert in 1849. To the southwest of us, about twenty miles off, appears a low gap in the mountain range between us and the Goshoot mountains, the point we are aiming at. This gap, then, is directly in our course. But there are no indications of water in that vicinity, and the grass looks sparse. If, however, we could get through the pass we could doubtless reach the warm springs fifteen or twenty miles beyond, of which the guide is personally cognizant. To the south, in the Kanne-ke-ki-be mountains, the indications of grass and water are decidedly better, but the direction is too far south; and besides, if we should go thither and find no water, the probabilities are we should be so far from the Warm Springs, a necessary point in our course, that we might not be able to reach them the next day, and the consequence would be we should be without water two days. The chances are in favor of our striking for the Cow Pass, or gap, to-morrow. This afternoon we had our kegs filled, to be in readiness for to-morrow's march. The spring where we are encamped I call Pleasant Spring, at the suggestion of Lieutenant Chapin.

Camp No. 5, Pleasant Spring, October 24.—Thermometer, $6\frac{1}{4}$ a. m., $40\frac{1}{4}$ degrees. Atmosphere damp and threatening a storm. Left at 7 o'clock; course southwest to gap referred to yesterday. The desert as level as a floor, and in spots perfectly smooth and divested of every vestige of vegetation, and even of that universal plant in this country, the wild sage. The soil is a clay, slightly intermixed with fine sand, and packs hard. Both Captains Stansbury and Beckwith represent the desert further north as quite soft under the influence of snow and rain, but probably on account of the valley being higher where we are, our road will be more passable under these circumstances, and the guide, who has had some experience on these deserts, say it will not cut deep in wet weather. The bare spots referred to are where the water has collected and stood for some time. At the foot of the mountain which we are skirting on our left, at about 8 miles from our last camp, I notice a great deal of bunch grass. At this place the bottom of the valley is broken, and there is quite a low vail, or arroyo, where, if anywhere, water might be possibly got by digging.—(See accompanying report of Mr. Engelmann on this subject.) Indeed, the indications are that there has been water here recently, and the green grass in places show that it might probably be got not far below the surface. The general appearance of the soil of the desert is that of a baked surface checkered by cracks, sprinkled thinly with small artemisia, with now and then a patch smooth and denuded, and looking like a polished clay floor. Went with the guide on a high point of some highly scoriaceous rocks, about 20 miles from our last camp, to see the prospect towards the south; gloomy enough, no signs of water and no assurances of our being able to head the mountain range which we are approaching, except by a journey of 30 miles, and even this is not certain. Our plan, then, is to continue on our course and to try the gap towards which we are approaching. The valley to the south and north of the point of view just referred to

tends east of south; appears to be some 25 or 30 miles long, and varies in width from 5 to 15 miles. The rocks whence our point of view was had are the most scoriaceous and vesicular of any I have seen, and when broken ring and presents a fracture like steel. Struck across to pass to examine its practicability for wagons before dark. Steepest portion near the top, about $\frac{1}{4}$ mile. Find it impracticable for loaded wagons, but with an expense of say five thousand dollars might be made passable. Ascended the highest eminence adjacent, to take a view of the valley ahead of us. Towards the west, some 35 or 40 miles off, could see the Goshoot mountains ranging about north and south. Intervening between it is the great desert Lieut. Beck with travelled over. Towards the northwest it appears uninterrupted by any obstacle. Far off in the desert the light sand could be seen drifting under the influence of the wind, and towards the northwest the bottom of the valley appears of a whitish complexion. On account of the steep ascent of the pass, it looks very much as if our expedition had come to an end. We could, by unpacking our wagons and carrying everything up by hand, and doubling the teams, probably be enabled to get over, but this would consume so much of the day to-morrow that we would not be able to reach the spring before late in the night, if at all during the day; so we would probably be kept out of water 48 hours. Another plan is to go up the valley southwardly in which we are, and attempt to head or pass through the range in that quarter; but this would involve a journey of 35 or 40 miles before we could get water, which our teams are not equal to. My best course will be to dismount some of the dragoons, pack 5 or 6 days' rations and some bedding upon them, send the wagons and a portion of the party back to Pleasant Springs, where the animals can recruit till my return, and go myself with the remainder through the pass ahead of us, and explore thence to Fish river, the end of our exploration. On my return I can vary my route, and, making a detour more to the south, examine the practicability of a route in that quarter. With my mind fully made up to this course I retired for the night. One of the ambulance mules gave out before getting into camp, and one of the six-mule teams gave out entirely, so that the wagon had to be drawn on by another set of mules. The pass near our camp I have called *Short-cut Pass*, it furnishing the shortest route to the Goshoot mountains. There being no water and but little grass where we are encamped, we are obliged to deal out our last forage and draw upon our kegs of water.

Camp No. 6, Short-cut Pass, October 25.—Thermometer at 5 o'clock 32 degrees. I rose this morning with the expectation of arranging matters so that the exploration might still be continued onward as reasoned in my journal of yesterday; but, much to my disappointment, I found it had been snowing during the night, and a cold and driving wind had set in from the north, which threatened very seriously the safety of our return to Camp Floyd without loss of damage. We had travelled 40 miles or more over the Great Desert open for about 100 miles to the north; and, in addition to this, on our return we may possibly have to thread Reynold's Pass, into Rud-

valley, difficult under any circumstances with wagons, and impossible when choked up with snow. It was just the season when such storms might be expected, and as Pleasant Spring, where I had last night determined to send the wagons, on account of its north exposure and generally unsheltered position was no place for the animals to be herded, or party to encamp to await my return, and the snow might prove a very serious obstacle to my own progress with packs, and it was very certain we could not remain where we were, without water, I determined at once to retrace my steps to Pleasant Spring, and thence return to Camp Floyd by a shorter route, which the topography of the country seemed to make possible. I believe I shall always be found willing to endure necessary evils when they are to be encountered to insure the accomplishment of an important end; but not believing that the enterprise I was engaged in was of more importance than the preservation of my party, I have concluded upon the step just referred to. Accordingly we took up our return march at 7½ o'clock a. m., our course being the reverse of yesterday's. The forepart of the journey was quite cold, and the snow driving in our faces from the north made the journey still more disagreeable. By getting off our horses and walking, however, we managed to keep ourselves tolerably comfortable. The road having a slight descent from the mountain, and the mules feeling conscious that they were going home, the journey was made much quicker than on our outward trip, and we arrived at Pleasant Spring at 4 o'clock p. m., and encamped. On this occasion we got our wagons up to within a few yards of the spring; indeed, wells have been dug both above and below the camp in the spring arroyo. There was rather an unusual incident occurred to-day along the route. Mr. Engelmann, the guide, and myself were riding in advance of the column, well muffled up about our throats and faces to keep off the cold and snow, when the guide was heard to say, in a low, careful tone, "Look to your right! look to your right!" when what should be following us or passing us within 30 feet, apparently unconscious or indifferent about our presence, but a veritable wolf, which on no other occasion have I been able to get within gunshot range of me. It seemed it had been attracted by the pointer dog or rather bitch with us, and was so much taken up as not to be aware of our proximity. Our pistols were out of our holsters in a moment, and Mr. Engelmann and the guide both shooting at once, a ball was put through the side of the wolf, which set him to spinning round—his head, as it were, seeking the place and cause of the sudden shock; recovering, then, for a moment his consciousness, he leaped a few yards from us and fell dead.

Camp No. 7, Pleasant Spring, October 26.—Thermometer at 6½ o'clock a. m. 23½ degrees. Ice formed during the night. The wind, however, which had been blowing fresh from the northwest yesterday, went down at sunset, and we passed the night comfortably. This morning the atmosphere is unusually clear, and the distant mountains show very plainly. Believing that I can shorten the route back to Camp Floyd by turning a short low range of mountains

ahead of us at the south, I laid my course accordingly, and in $7\frac{1}{2}$ miles our route became tangent to the south point of said range. Passing this point we found ourselves in a valley lying directly south of Skull valley, and separated from it by a low ridge or rim about four miles distant, which would be no obstacle to the passage of wagons from one valley to the other; indeed, so slight is the ridge, they may both be considered almost as one valley. The general width of the valley is about eight miles, and it is characterized, as these valleys are generally, by a shallow rim extending across it at the south, about eight miles distant, and which forms no barrier to a passage by wagons into Sevier valley, directly south of it. The bottom is covered with artemisia, and, like that of the other valleys, the soil is areno-argillaceous, and utterly worthless for agricultural purposes from the want of water to irrigate it. On the east side of the valley, upon the benches, and extending nearly down to the middle, is an abundance of nutritious grass, which, however, wants the accession of water to make it suitable for grazing purposes. Cedars grow on the sides of the mountain. After passing the point of ridge before referred to, our course lay nearly northeast to what appeared to be the pass into Rush valley, which I noticed on the 19th of October, and which I represented I would reconnoitre on my return route to Camp Floyd. In $4\frac{1}{2}$ miles we reached the base of the mountain near the foot of the pass, when, after ordering the party to encamp, I examined the pass entirely through to Rush valley, a distance of about six miles. I find the pass entirely practicable for wagons, without the necessity for any labor, though going east as we are we shall be obliged to double our teams, to get up the last ascent, near the top of the divide. Going west the pass is still better, and loaded wagons will be able to get through without doubling. We are encamped within a mile of the foot of the pass, where there is no water. Grass and cedar fuel abound. Day's journey, $11\frac{1}{2}$ miles.

Camp No. 8, west foot of Gen. Johnston's pass.—Thermometer, 6 hours 20 minutes a. m., $29\frac{1}{2}$ degrees. Were off at $7\frac{1}{2}$ o'clock a. m. Weather threatening. Anxious to get through the pass before another snow, our course for the first mile lay about northeast, when we turned the point of the mountain and got into the mouth of the pass; thence our course, somewhat winding, lay generally south of east to the east mouth of the pass, a distance of 5 miles; to the foot of divide being 4 miles, and $1\frac{1}{2}$ mile thence to Rush valley. Having passed too far in the gorge to go the near cut I returned by yesterday, the train took up the furthest route, which is to the south of the other, and the roughest. The short cut leads off from the main pass to the left, up a ravine about two miles from the west mouth of the pass, and may be recognized by the thick grove of cedars growing in it. The nearest is certainly the best going west, and, probably, also for trains going east. The steep ascent through the cedar ravine referred to is about a hundred yards in length, and though somewhat sidling and requiring a little side cutting, wagons can now pass over it. We reached the top of the pass at $11\frac{1}{2}$ o'clock a. m., the teams doubling to get up the last ascent. Thence to the mouth of the pass

the grade is quite easy. This pass I have taken the liberty to call General Johnston's pass, in honor of the commanding general. From the foot of the pass our course was northeast by east, until we struck Meadow creek, where we encamped, about 4 miles to the south of our camp of the 19th of October, on this same creek. This creek, as well as Rush valley, having been described in my outward journey, nothing more need be said respecting it.

Camp No. 9, Meadow Creek, October 28.—Thermometer at 6½ o'clock 21½ degrees. Got off at 7 o'clock a. m. Our course lay generally northeast for about 11 miles, when we struck our outward track, and in 8 miles reached Camp Floyd. Outward journey from Camp Floyd to Short-cut pass having been 81 miles; inward, 64½, a difference of 16½ miles in favor of the inward route.

Results of the exploration and discussion of the different routes from St. Louis to San Francisco.

There were no experiments made in relation to the practicability of finding water in the desert by digging wells, for the reason that the general commanding dispensed with this portion of my orders before I left Camp Floyd, on account of the lateness of the season. Neither can it be said that I accomplished all I expected in the expedition. I discovered on the desert one new spring, (Pleasant Spring,) of which nothing was known before, and on my return brought my wagons through a new pass (General Johnston's pass;) which I got through without difficulty, and which, in point of practicability for wagons, is far superior to the more northern, or Reynolds' pass. Immediately on my return, Mr. Chorpening, the contractor for carrying the mail on the Humboldt route from Utah to California, at the suggestion of the general commanding, went, with a small party, over my track for the purpose of examining it in reference to the transfer of his stock to a more southern route, a measure which had been rendered necessary by the obstructions from snow on the Goose Creek mountains. This party returned some time since, and Mr. Taft, who was one of the number, has informed me, after a good deal of exploration, they could find no better route to connect with the Humboldt route and avoid the Goose Creek mountains than that I went over. Since then they have transferred their mail stock to this route, and are now making use of it as a winter route towards California. Pleasant Spring is one of their stations, and until the Short-cut pass can be made practicable for wagons they will pack the water to the next spring beyond; thence there is no difficulty from want of water to the Humboldt river.*

It would appear, then, that my reconnaissance accomplished all that could have been, so far as the determination of the best route over the desert to connect with Captain Beckwith's route at the Goshoot mountains was concerned. But still the range through

* Since the above was written Mr. Chorpening has been here, and reports that he has got a good hard wagon route all the way to the Humboldt.

which the Short-cut pass extends requires further examination towards the south to see if water and grass cannot be found in that direction, and the mountain be turned or passed through, and thus the Short-cut pass be avoided. Mr. Taft informed me that the mail party examined this range for a short 20 miles south, and could find no pass through. It appeared, however, to my guide and myself, that some miles beyond where they examined a pass might be found. Be this as it may, I am by no means discouraged in the idea that water and grass can yet be found further south, and though the localities may not be sufficiently convenient to be of service to connect with Captain Beckwith's route, yet they would be of the greatest value in the possible extension of the route. I have already been over all the way through to California, and this in such a direct course as in connexion with the Fort Laramie route, or that of Lieutenant Bryan, *via* Fort Kearney, to Fort Bridger, and the new one I have opened thence to Camp Floyd, might, in all probability, furnish a route all the way through from St. Louis to San Francisco, which would be 500 miles shorter than the present post route between those points, by the way of Fort Smith through northern Texas and Arizona. To make this plain, I here give a *table* of distances between St. Louis and San Francisco on these various routes, carefully prepared from the best sources. And I do this not to disparage said southern post route, but to give the facts just as they are in relation to the northern or Utah routes. California, as well as New Mexico and Arizona, will require a southern mail-route through their territories, and doubtless the facts in relation to that route will be laid before the government. But I think it equally clear that California and Utah will also require one through the Territory of the latter, and therefore it is proper to present the facts of the route just as they are. Besides, the northern route is the great thoroughfare for emigrants to California.

Table of post and other routes from St. Louis to San Francisco.

Designation of route from St. Louis to San Francisco.	Intermediate places.	Intermediate distances in miles.	Authorities.	Total distance between St. Louis and San Francisco.	Difference in favor of the Utah routes over the present southern post route by way of Fort Smith, through Texas and Arizona, from St. Louis to San Francisco.
Present northern travelled route by way of Fort Leavenworth, Fort Kearney, Fort Laramie, South Pass, Echo cañon, Salt Lake City, Hensell's spring, Humboldt river, &c., to San Francisco.	St. Louis. Fort Leavenworth. Salt Lake City ---- San Francisco.....	360 1,136 1,020	By land estimated. Capt. J. H. Simpson, Topographical Engineers. Measured by odometer. Guide Book, by Cain & Brower; distances believed to have been measured by odometer.	2,506	259
Southern Utah route from St. Louis to Salt Lake City, as above; thence by way of Vegas de Santa Clara and Los Angeles to San Francisco.	St. Louis. Fort Leavenworth. Salt Lake City ---- San Francisco.....	350 1,156 1,230½	Estimated. Captain J. H. Simpson. Guide Book, by Cain & Brower; believed to have been measured by odometer	2,716½	48½
Route by way of Fort Leavenworth, Fort Kearney, Platte river, Lodge Pole creek, Bryan's Pass, Fort Bridger, new route to Camp Floyd, proposed middle route, thence to San Francisco.	St. Louis. Fort Leavenworth. Fort Kearney..... Bryan's Pass..... Fort Bridger..... Camp Floyd	360 281 493½ 185½ 166	Estimated. Captain J. H. Simpson. Lieut. F. T. Bryan, Topographical Engineers. Measured by odometer. Captain J. H. Simpson; measured by odometer.	2,265½	499½
	San Francisco.....	300	Estimated	2,265½	

TABLE—Continued.

Designation of route from St. Louis to San Francisco.	Intermediate places.	Intermediate distances in miles.	Authorities.	Total distance between St. Louis and San Francisco.	Difference in favor of the Utah routes over the present southern post route, by way of Fort Smith, through Texas and Arizona, from St. Louis to San Francisco.
Southern mail route, by way of Fort Smith, through northern Texas and Arizona, to San Francisco.	St. Louis. Fort Smith Los Angeles San Francisco.....	478½ 1,924½ 462	Mr. Bailey, agent of the Post Office Department, as published in St. Louis Republican of October 10, 1858.....	2,765	

In this table it will be noticed I have assumed that a route can be found which would make San Francisco not more than 800 miles from Camp Floyd. At present, the shortest route, which is the northern one, makes the distance 1,020 miles. But the difference of longitude between San Francisco and Camp Floyd is, approximately, $10^{\circ} 3'$; the difference of latitude, $2^{\circ} 27' 23''$. The air-line distance will then be 557 miles. The difference between this and 800 miles, the assumed distance by the proposed route, is 243, or within 35 miles of half the air-line distance. Surely, then, this is enough allowance for deviations from a direct course. But this is not entirely a conjectural supposition. I have inquired of some of the best guides the country affords, such as Mr. John Reese, George H. Bean, and Thomas D. Pitt, men who have been repeatedly over the various routes between this and California, and they not only are firmly of the opinion that a shorter route than any we now have can be obtained, but that it can be found within a distance of 800 miles. The assumption, then, being well founded, the above table will show that the present northern mail route between St. Louis and San Francisco is shorter than the southern between those places, by the way of Fort Smith and Los Angeles, by 259 miles. That the middle route, *via* Fort Leavenworth, Fort Kearney, Lodge Pole creek, Fort Bridger, Camp Floyd, and the proposed middle route, thence to San Francisco, is shorter by $499\frac{1}{2}$ miles. And that even the longest route, through Utah, is shorter by $48\frac{1}{2}$ miles. It assuredly, then, becomes a matter of public moment that the middle route should be extended from Camp Floyd to San Francisco in the direction proposed; and whether the route should be found or not, (and I am of the opinion that it can be,) there will have been something gained in respect to the geography of this immense *terra incognita*, which should no longer remain such under our government and institutions.

Besides the element of distance, which would make the middle route superior to either of the others, the northern is impassable at times in the winter on account of snow on the high mountains between Bear river and the Humboldt river, particularly the Goose Creek mountains, while the middle route would doubtless be passable the whole year. In addition to this, Mr. John Reese, who is well acquainted with this northern route, says that as much as 30 per cent. of the stock driven over this route die every year on account of insufficient and poisonous water and grass at the lower portions of the Humboldt, and between it and Carson river.

The southern Utah route, besides being objectionable on account of its great length, is as much so on account of a large portion of it being a sandy desert and deficient in water and grass. The middle route would be quite direct to Genoa, on the Carson river. Some 50,000 dollars have already been expended by the people of California in the construction of a road from Genoa to Placerville over the Sierra Nevada; and the telegraph is said to be already in operation between these places. When we consider that Placerville is on the direct route to San Francisco, the bearing of the improvements on the expediency of the new route will be readily perceived. In further

illustration of this point I here give a copy of the petition of the citizens of El Dorado county, in California, to Congress in respect to the central overland mail, with the prefatory remarks of the editor of the Valley Tan, a "Gentile" newspaper published in Salt Lake City, from which I extract the memorial:

"Central Overland Mail.

"Our Placerville correspondent sends us a copy of the subjoined petition to Congress, and informs us that it is now being generally circulated through El Dorado county, and will probably receive the signature of everybody who sees it.

"We commend the petition to the attention of the citizens of the State, especially those of the central portion of it, who are more particularly interested in the central road across the continent."—(*Valley Tan.*)

"To the honorable the Senate and House of Representatives of the United States of America:

"The undersigned, citizens of ———, in the State of California deeply impressed with the imperative necessity of an intimate and speedy mail connexion with our friends in the Atlantic States, and believing as we do that if your honorable bodies will increase the mail service between St. Joseph, in the State of Missouri, and the city of Placerville, in this State, so as to give a tri-weekly mail each way between these places, this laudable end can be accomplished, therefore respectfully and earnestly petition your honorable bodies to take such action in the matter as the exigencies of the case may demand.

"It is a well known fact that for the last nine years the central route to the Pacific, *via* Salt Lake City, has been, and still is, the great thoroughfare of immigration to California. That in addition to its being the best natural road, for the same distance, on the globe, it is also supplied with a continuous meadow of nutritious grasses, upon which countless thousands of animals subsist during the annual migration.

"Moreover, the counties of El Dorado and Sacramento have appropriated and expended 50,000 dollars in the construction of a good wagon road over the Sierra Nevada, from Placerville to Carson Valley. That work is now completed, and is probably one of the best mountain roads on the continent. Already a magnetic telegraph line is being rapidly constructed along the route to Salt Lake City. Comfortable stations and resting places are being established at proper intervals on the road; and although the present mail contractors have had an extremely limited period in which to prepare for the service, the weekly mails now reach California with surprising regularity.

"For the above reasons, and from a knowledge of what has already been accomplished, we are convinced that in less than two years from the present date the mail can be carried over the route in fifteen days travelling time. We therefore earnestly solicit that you may increase

the speed, so as to run through in twenty-five days, and thereby assist in preparing the way for a more expeditious transit at an early day.

"Believing that your honorable bodies will perceive and appreciate the great national importance of a more speedy and frequent communication between our widely separated possessions, we respectfully urge the foregoing upon your early and favorable consideration; and your petitioners will ever pray, &c."—*Alto California.*

A just tribute.

In closing my report in relation to the last reconnaissance, I cannot forbear bearing this testimony to the zeal which Lieutenant Chapin displayed in continuing in command of the escort of the expedition when the impaired state of his health on the morning of his departure from Camp Floyd evidently made it advisable for him to go on the sick report. Before starting upon the expedition I warned him of his imprudence, but he said he had been detailed by his colonel for the duty, and as he considered it a compliment he could not withdraw, it is a pleasure to me to record, as I do, the efficiency with which, notwithstanding his illness, he conducted his portion of the expedition, and the courtesy which I ever received at his hands.

Indians.

My instructions gave me authority to employ an interpreter for the purpose of communicating through him with the Indians I might meet, and thus obtain from them information respecting themselves and other Indian tribes. We saw but three Indians, (Tuilla Goshoots,) and they escaped us before the guides had an opportunity of conversing with them. I have, therefore, nothing to communicate from anything I saw or was personally cognizant; but Mr. Bean, who has been in this country since 1849, and has frequently passed through the various tribes between this and California, and who was employed at various times by Governor Young in the Indian department, has from time to time given me some facts in relation to the Indians, which it might be of interest to communicate. He has also furnished me with a vocabulary of words in the Ute, and a few in the Sho-sho-ne and I-at languages, which, although not as extensive as I could wish, will be of interest to the ethnologist. It will be found in the appendix, marked "E."

Goshoot and other Indians.

The Goshoots are an offshoot from the Ute Indians, and left their tribe about two generations ago, with their leader or chief, Goship. Their proper name is Gosha-Utes, which has become contracted into Goshoots. They are little esteemed by the original tribe from which they have sprung. They number probably about two hundred, and live principally in the Goshoot mountains. Male and female go naked

in the summer, except a breech-cloth in the case of the former, and a short apron-skirt in that of the latter, are worn as the only covering. In the winter the males wear leggings and a kind of coat made of rabbit skins. The women dress as in summer, except that they wear leggings, and their aprons are made of rabbit skins. The dressed, they sit crouching closely together before the fire, and endeavor to keep warm. Their only shelter against snows and the rigor of winter is a kind of wall three or four feet high, made of sage bushes packed together and curved over a little at the top. Sometimes they get into caves or holes in the rocks for protection. They live on grass-seed, flag-root, tuilla (three-corner rush) root, miclizards, snakes, grasshoppers, crickets, &c. The grasshoppers and crickets they roast in the summer, and thus preserve them for winter use. On being brought to childbed, Mr. Bean says, no one is allowed to be present with the woman, she being her own midwife. They use the primitive mode of generating fire by rubbing two pieces of wood together.

They, as well as the Utes, frequently bury their dead in spring by attaching sometimes a stone to them, and sometimes by pushing and keeping them down with a stick. Mr. Bean accounts in this way for the skulls which are found in Skull valley, and which has given it its name. It is somewhat difficult to credit this, but the guide, who bears the character of a reliable man by all who know him, and he never shown me that he is any thing different, says he has actually seen several buried in this way near Provo, where he resides. Those they bury in this mode are not persons of any distinction. The chiefs they bury under a pile of stones. *Wacca*, sometimes called *Walker*, a renowned Ute, and chief of all the tribes called Utes, *Pawnee*, *Pieds*, and *Goshoots*, died early in 1855, and was buried on a high mountain twelve miles southeast from Fillmore. Mr. Bean informs me that four *Pied* prisoners (three children and one squaw) were buried with him. Three of the prisoners were first killed and then thrown into the grave; the other was thrown in alive. Ten horses were also killed and thrown into the pile; also ten blankets and ten buckskins.

His people lamented over him some twenty days, all the while crying and singing. Mr. Bean was sent by the superintendent, Governor Young, to comfort them and give them provisions. He reports that it was with the greatest difficulty they got the horses to the mountain. The successor of Walker is his brother *Arrapa*, whose Indian name is *Sempoch*; he lives in San Pete valley, near Manti. Mr. Bean informs me he recovered a ring belonging to *R. H. Kern*, the assistant of Captain Gunnison, and who was massacred by the Indians at the same time with that officer and his party. He says it had his name inside of it, and that he gave it to ex-Governor and Superintendent Young. He presumes it has been returned to Mr. Kern's friends. He was at the time interpreter to the Indian agent, Mr. Rose, who recovered a portion Captain Gunnison's property. They recovered two ponies, a revolver, and a piece of the odometer it having been taken apart by the Indians. Some citizens of Fillmore

got the two-wheel odometer carriage, and, he believes, turned it over to Governor Young.

The Snakes (Shoshonees) are more united than the Utes, and, according to Mr. Bean, a nation of more principle. He considers them more powerful, though not as numerous, as all the Utes combined. Their chief is *Wasshekick*, and he lives on Green river.

The *Utes* have been guilty of aiding and abetting the stealing of the children of the Pah-utes, although a branch of themselves, and selling them to Mexican traders. This dealing in human flesh has been a traffic which has been carried on from time immemorial with these Indians. The Pah-utes, who are an inferior branch of the Utes proper, and are called Pah-utes from their living mostly on water-courses and subsisting on fish, (pah meaning water,) are very much disorganized and open to the incursions of other tribes.

The Pawants are a branch of the Utes, mixed with the mongrel breeds of California, and speak the Ute language. *Kannosh* is their chief. They occupy the Parran and Beaver valleys, and the valley of the Sevier. It was a portion of this tribe, Mr. Bean says, that killed Captain Gunnison's party. These Indians he represents as a clever people, more to be depended upon than the others, and the only outrage they have been known to commit is that of massacring Captain Gunnison and party. *Kannosh*, their chief, Mr. Bean thinks, is the most gentlemanly bearing Indian he has ever met, and an excellent subject for civilization.

Arrapene, the chief of the Utes, is of a vindictive, unstable character, and thinks nothing of shedding blood when enraged. His habits are good in reference to temperance, in eating, and drinking; but he cannot govern his temper. He does not rate as a chief as high as his predecessor, *Wacca*.

Wacca was very successful in levying tribute from the Mexicans who traded between New Mexico and California. These Mexicans would buy children stolen from the Pah-utes, giving horses and buckskins in exchange, and sell them in New Mexico and California.

The *Pieds* live adjoining the Pawants, to the south of the Beaver mountains, down to the Santa Clara river and upper branches of the Rio Virgen. *Quanarrah* is the chief of the upper Pieds, and *Tatsigobbets* of the lower Pieds. Their language differs from the Ute, though similar in some respects.

Geology.

I have said but little of the geological aspect of the country over which I have passed in my several reconnaissances, for the reason that I have left this portion of the expedition to my assistant, Mr. Henry Engelmann, upon whom, from education in his native country, Germany, in this branch of physical science, and his previous experience in geological exploration upon the plains with Lieutenant Bryan, Topographical Engineers, I would prefer to depend than upon my own flu- understanding and observation. I therefore refer you to his report, proofs. "A" in the appendix, which will be found instructive, not

more on account of the speciality with which he goes into the composition of geological formations, than the range which his observations and reading have enabled him to take in the classifying and arranging of the different formations and their several epochs. His report has the merit also of being of a practical and economical character.

Astronomy.

Observations were made by me at proper intervals with a sextant and chronometer, for latitude and time, or longitude along both the routes reconnoitered; but as the call for my report is a pressing one, I have been obliged, for want of time and any one to assist in my labors, to leave them to be reported on another occasion. My assistants, Lieutenants J. L. K. Smith and H. S. Putnam, Topographical Engineers, have only within a day or two arrived from Fort Bridge where they have been surveying the military reserve, and therefore have been so situated as to be incapable of rendering any assistance in the mode needed. I must, however, express my acknowledgments to Captain Thomas H. Neill, 5th infantry, who has courteously relieved me of the labor of taking a *tracing* of my map.

Meteorology.

Barometric and other meteorological observations have been taken all along the route reconnoitered, but the apology for the non-inclusion of a profile of the routes in this report is that given above in respect to the astronomical observations, and it must be presented in another report.

The thermometric observations, however, require no computation and will therefore be found in appendix "D."

Itinerary.

For an itinerary of both the outward route from Camp Floyd to Short-cut pass, and the return route, which is the nearest and best with all necessary remarks in relation to wood, water, and grass, see appendix "C."

Respectfully submitted.

J. H. SIMPSON,
Captain Corps of Topographical Engineers
 Brevet Major FITZ JOHN PORTER,
Assistant Adjutant General U. S. Army.



APPENDIX "A."

Preliminary report on the geology of the country between Fort Bridger and Camp Floyd, Utah Territory, and southwest of the latter place, along Captain J. H. Simpson's routes, 1858; by H. Engelmann, geologist of the party.

CAMP FLOYD, UTAH TERRITORY,
December 25, 1858.

SIR: The limited time allowed for the preparation of the accompanying report, together with the want of books of reference and other advantages enjoyed in a more civilized country, has not permitted me to make it complete. A more thorough study of the collected materials may show the necessity of slight alterations, but I am confident that, in all material points, my statements will be found correct, and wherever some doubt remains I have conscientiously stated it. The paleontological collection has not received yet the proper attention, but in this mountainous region, where plutonic powers have been acting at various, partly at comparatively recent periods, heaving up chains of mountains and dislocating the strata, I have been able easily to trace the limits of the different formations by their lithological character and relative stratification, and I have found my conclusions proved by the examination of the fossils, as far as it has been carried on. By the use of a blow-pipe and a few of the most simple re-agents I have been enabled, at this early time, to communicate some interesting information in regard to the chemical composition of some substances found within the limits of the explorations.

I am, sir, very respectfully, your obedient servant,
H. ENGELMANN.

Captain J. H. SIMPSON,
*Chief of Topographical Engineer Department,
Department of Utah.*

REPORT.

The country, the description of which is the object of this report, is highly interesting in various respects. Although it extends only from the western rim of the Green River basin, over the Washitah mountains, to the eastern part of the Great Basin, it comprehends marine tertiary deposits; strata of the cretaceous, particularly remarkable for the coal they contain; igneous rocks of different periods; rocks of the carboniferous formation, and extensive quarternary deposits.

It bears striking evidence of the most powerful eruptions of the fluid interior of the globe, but its surface presents no less strong proofs of the vast changes produced by the gradual action of nature,

without any great effort, such as we daily observe it, and to which we are likely to attribute only a very inconsiderable effect, although geology teaches us that all the stratified rocks, many thousand feet in thickness, have been formed by that very same slow process.

The formation of the Green River basin, of marine tertiary age.

This formation is largely developed near Fort Bridger. It extends along the road from the South Pass to the dividing ridge between Weber and Bear rivers. The strata have not been tilted directly, but I found them, wherever they have come under my observation, nearly horizontal, or conformable to the general configuration of the country, with a slight dip off the mountains which limit the basin, as well on the northeast as southwest side. Hereby they can be readily distinguished from the older formations, which have been subjected to more disturbances. They overlies, unconformably, strata of cretaceous age, and must therefore belong either to the later part of the cretaceous or to the tertiary period. That dislocations of this strata took place during the cretaceous period I have found near the Medicine Bon Buttes, where evidently cretaceous strata are overlaid unconformably by other strata of the same formation. I have found only a few fossils, but Professor Hall, who has obtained fossils from this formation by Captain Stansbury, pronounces it tertiary.

As we find the Green River basin on several maps marked "great coal basin," it may be proper to remark here that the coal-bearing strata probably do not belong to this formation, but underlie it, and are of cretaceous age. More will be said of them below.

Near Fort Bridger the formation of this tertiary basin is represented by three series of strata, very different in their lithological character. The strata of the upper series are generally green; some coarse grained sandstone; arenaceous shales; sandy argillaceous and purely argillaceous shales, interstratified with some slaty sandstone, and calcareous or sandy slates. The color of the sandstone is occasionally changed into yellow brown, or red, indicating various states of decomposition of the silicate of iron, which, in some cases at least, is the green coloring substance. In some places they are rather an irregularly indurated sand, with harder concretions in a more or less loose material. The shales decompose by exposure, and effloresce with a salt which is destructive to the vegetation and makes the water, in places, brackish. These strata, where capped by some of the harder layers, frequently form prominent bluffs, the soft portions wearing away to the base, till the upper strata are left unsustained, when they break down and form a new vertical face, which is soon again cut up by rains and disintegration, and looks rugged, and frequently bold and picturesque. In consequence of this, combined with the horizontality of their stratification, they make numerous table hills, characteristic to the formation, some of which are prominent landmarks. Part of this series is also exposed in the eastern face of the plateau between Fort Bridger and Muddy creek. Its thickness was estimated at 200

to 300 feet. Fossils are very scarce. Some silicified wood found on the surface may have come out of these strata.

The strata of the second series form the lower portion of the plateau. They are slaty calcareous sandstones, slaty limestones, and some purer limestones, in mostly thin layers, interstratified with a great deal of argillaceous shales. The color of all these strata is generally white. The limestones are partly oolitic and fetid, from the large amount of organic remains which they contain, but specimens of fossils can only be obtained in places where the continued influence of water has softened and decomposed the rock. I only got some gasteropoda, and a few acephala, and remains of fishes. Other strata of the limestone are sub-crystalline and very compact. The rock quarried as building stone near Fort Bridger, and also burnt to lime, is uncrystalline, uneven, and earthy or chalky on the fracture, and rather impure. In several places I noticed fibrous gypsum on the slopes, which seems to fill fissures in these rocks. The thickness of this series, near Fort Bridger, was estimated at, at least, 100 feet.

The third series is composed of light colored, generally white, fine grained sandstones, in thick layers, interstratified with mostly brick-red, arenaceous shales. Its total thickness is over two hundred feet, and may be considerably greater. These strata, in which I found no fossils, might, on a superficial examination, be readily mistaken for some of the underlying cretaceous strata, with a similar lithological character, if their unconformable superposition did not indicate the difference.

The country occupied by this tertiary formation is remarkable for its barrenness; in many places it scarcely affords food to a thin growth of dwarfish sage. This is partly owing to the sterility of the soil, a poor, sandy loam; partly to its shallowness in many places, where horizontal strata of limestone and sandstone extend over considerable distances near the surface, undecomposed for the want of humidity; partly to the amount of salty substances in the earth; partly, and mostly, to the dryness of the climate and the perfect drainage by the sandy strata. Only in the immediate neighborhood of creeks a good soil has been formed. Such is the case in the bottom prairie in which Fort Bridger is situated. In the neighborhood of the mountains, where there is more humidity, the aspect of the country is more favorable, and the soil is also better there, in consequence of a more complete mixture and decomposition of the detritus of those and other rocks. There we generally find a good growth of sage, mixed with a great deal of nutritious mountain grass. The country at large is an unredeemable barren. Some few creek bottoms may be susceptible of cultivation, but the elevation of the country, with its sudden changes of temperature, its late snows and early frosts, put narrow limits to the agriculturist. Only such plants might be grown in a few favored spots as require a very short season for their development, and are generally adapted to much more northern climates; and even those are liable to be destroyed by the swarms of grasshoppers which occasionally infest this region. Cultivation will never be carried further than to

help to sustain a station put up for some other purpose, and relying on supplies from outside in case the crop should fail.

The upper series of this formation forms the upper portion of the higher hills near Fort Bridger, but as the strata rises gradually towards the southwest, the second series, of which the lower hills near Fort Bridger are composed, soon attains the height of the plateau over which the roads lead westward. It caps the breaks of Muddy creek on Captain Simpson's new road, as well as on the old road. On the latter it was found some miles further on, near the top of high hills; and some strata near the top of the dividing ridge between Echo creek and Yellow creek seem to belong to this series. The third is exposed along Muddy creek; on the new road it forms the dividing ridge towards Sulphur creek, is then interrupted by upheaved strata of the cretaceous period, but was found again on the western bank of Bear river, and on both sides of the dividing ridge towards White Clay creek. On the old road it also forms the divide towards Bear river, is there interrupted by tilted cretaceous strata, which was found overlying unconformably near the mouth of Sulphur creek. It extends further west, across Bear river to the Needles, near Yellow creek, which again disrupts its continuity, but beyond forms part of the divide towards Echo creek, and may extend some distance down that creek. On the western bank of Bear river the strata are found far up and down the stream, at least to the mouth of Yellow creek. This tertiary formation extends far to the south of the Green River basin.

Among the fossils collected by Colonel Frémont on the Uinta river, near longitude 111° and latitude 40° , and described by Prof. Hall, are two—*Mya fellinoides* and *Cerithium tenerum*—which are identical with specimens found by me in the second series on Horse Fork of Green river.

Covering this formation I noticed in many places boulders of silicious rocks, highly altered sandstone, and the like, some of which contained traces of fossils. I may be enabled to trace their origin which is probably the carboniferous formation.

The cretaceous formation.

I have found the cretaceous formation developed on the eastern slope of the Washita mountains. This discovery, in connexion with those which I made in 1856, while geologist of the exploring expedition under Lieutenant F. T. Bryan, Topographical Engineers, give a key to incoherent facts stated by various explorers, and enable us to trace the cretaceous formation over a vast area on which it was before not known to exist; it will be an important link for the connexion of the northern and southern portion of this formation.

The cretaceous strata, as developed east of the Washita mountains, are not only interesting to the geologist, they also deserve the attention of the economist, so called, and the public generally, on account of the large quantity of coal which they contain, and which comes to the surface at several points. Little use is made of it now.

occasionally passing trains take some for blacksmithing, but who can tell what benefit may once be derived from the knowledge of these deposits. Now they seem to be valueless, thrown away by nature in a desert, but in this age of progress it is sufficient to know that there is a valuable article, and unexpectedly it will be turned to some use, and be considered a source of national wealth.

The interest of the subject, and the desire to bring useful information before the public, may excuse me if I transgress the limits of this report by dwelling a little longer on this matter, and pointing out the localities where coal has been found between the Missouri and the Great Basin. The regular coal measures of the carboniferous formation are known to exist in the southeast of Nebraska, the east of Kansas and the Indian territory, and the north and northeast of Texas. We take for granted that they extend some distance further west, below the surface, and that the beds of coal found elsewhere, in the middle and lower portions of this formation, may be developed and worked at whatever time the increased demand should warrant extensive and costly mining operations. West of these coal measures in Kansas and Nebraska we find a formation characterized by ferruginous sandstones, probably of cretaceous age, perhaps an equivalent of the coal bearing cretaceous strata of the Wahsatch mountains. In these some small seams of coal have been noticed, which, however, do not seem to be thick enough for practical use. The next coal known further west is lignite, at the eastern base of the Rocky mountains. These deposits have not been explored yet, and it is doubtful if they are of cretaceous or tertiary age; but the coal has been proved by the testimony of several explorers and travellers. It has been found between the North and South Forks of Platte river. Captain Abert, Topographical Engineers, in 1845, also observed strata which he regarded as an indubitable proof of the existence of coal northeast of Fort Union, near the headwaters of the Canadian, about longitude $104\frac{1}{2}^{\circ}$, latitude $36\frac{1}{2}^{\circ}$. And I find the existence of coal mentioned near the sources of Red river, within the limits of the cretaceous deposits. In the same longitude further north, near the Upper Missouri and Yellowstone rivers, an extensive tertiary lignite formation is found, surrounded by cretaceous strata. Vague intelligence of it had been received as early as 1806 by Captain Clarke. It has since been visited by several explorers, and a thorough examination has been made lately by Dr. Hayden, geologist of the expedition under Lieut. Warren, Topographical Engineers. Cretaceous or tertiary lignite deposits are known to cover large areas still further north, in the British possessions. West of the Black Hills cretaceous strata have been found on the North Platte river, in the neighborhood of the Red Buttes, and coal on Deer creek. I had an opportunity last summer to examine that country, and will give more information about it in my general report. This coal seems, also, to be cretaceous, and seems to form the continuation of the coal-bearing strata which I found in 1856 along the southern rim of the Laramie plains, extending west along the Upper North Platte river. Colonel Frémont had first made known that coal existed in the latter place.

The strata of coal which Captain Stansbury, Topographical Engineer, noticed in 1850 in various places, from Green river, near the mouth of Bitter creek, to Bridger's Pass, are undoubtedly a continuation of the same strata, and therefore cretaceous. He also observed coal at Sulphur creek, west of Fort Bridger, of so good quality that he considered it a stone coal of the carboniferous formation; and Colonel Fremont, in 1843, had found the same coal some miles northeast from there, on Muddy creek. Captain Simpson, while opening his new road, found similar coal on White Clay creek. The fossils which I found in the coal bearing strata on Sulphur and White Clay creek prove that they are of cretaceous age; and I have traced this formation along Weber river from Echo creek to Kamas prairie, and along its eastern affluents in that district. These strata are all tilted to a considerable degree, partly vertical, and are limited to the westward range of mountains composed of igneous rocks of a more recent origin. The lithological character of these coal bearing strata seems to indicate that they have been formed not far from a shore; and the different development of the cretaceous strata on Green river and North Platte would, therefore, not necessarily indicate a different age. My explorations did not extend further, but I am confident these strata will be found stretching around the Uintah mountains, and many miles north and south. In the coal bearing strata on Sulphur creek I found many fossils, one of which is identical with Professor Hall's "*Turbo, paludinæ formis*," from Muddy creek.

Captain Gunnison, Topographical Engineer, noticed coal in the southern continuation of the Green River basin, near the junction of the Grand and Blue rivers, at the foot of the Elm mountains. From the description of the general character of the country I conclude that the same formation is developed there as further north in the basin; the more so as the igneous rocks of the Elk mountains are very similar to those which have heaved up the strata near Weber river. Moreover, near by on Grand river, fragments of rocks were found containing fossils, which indicate the cretaceous formations. The same remarks may be applied to the outcrop of fine coal noticed by Captain Gunnison at the eastern slope of the Wahsatch mountains near the headwaters of Servier river.

Not far from this latter place, in the upper valley of San Pedro creek, an affluent of Servier river, taking its origin also on the eastern slope of the Wahsatch range, good coal is found and wrought to a limited extent for the use of blacksmiths. I have not had an opportunity to examine the locality, but I have got specimens of the coal now used at the blacksmiths' shops at Camp Floyd. It is a good coal, like that from White Clay creek, and seemingly of the same age; not of the carboniferous formation, but a superior bituminous coal of the cretaceous age.—(See below.)

Further south the cretaceous formation is largely developed along the Canadian, Red river, &c., and has been found to extend westward across the mountains into the valley of the Rio Grande and El Puerco. I refer to the reports of Captain Whipple, Captain May, and others, and to the geologists Mr. Blake and Geo. Shumard.

that whole extent of the cretaceous formation no indications of coal have been found, as far as I know, with the exceptions of the two points mentioned above, northeast of Fort Union, and near the head waters of Red river, but Captain J. H. Simpson, Topographical Engineers, in 1849, noticed coal in various places near longitude $108\frac{1}{4}^{\circ}$, latitude 36° , from the Puerco west to the Sierra Turecha. He states that part of the outcrops were rotten and inferior, while others showed a fine bituminous coal. Considering the vicinity of this to the extensive deposits of cretaceous age; considering, also, that after I have shown that the coal known in the Wahsatch mountains is none of the carboniferous formation—the only doubtful place being that in San Pete valley—no coal of that age is supposed to exist west of the coal fields of Iowa, Missouri, Arkansas, Texas, and adjoining tracts of country, we may presume that the strata in question are also of tertiary or more likely of cretaceous age, and further explorations will probably show them forming the continuation of the Green river strata. We know that the intervening mountain chains have, partly at least, been formed during or at the close of the cretaceous period. This obstruction to the continuity of those strata did, therefore, not exist at the time of their formation.

I have to point to another fact. Among the fossils found by me in the coal bearing strata of Sulphur creek are one or two which seem to be identical with those obtained by Colonel Frémont on Snake river, near long. 115° , lat. 43° . This seems to indicate a continuation of these strata to the north, and perhaps a connexion of the same with the cretaceous formation on the upper Missouri. I will, in the following, give a description of the character of this formation at the various points where I found it. The third series of the tertiary strata occupies the western bank of Bear river near the roads. Below the mouth of Sulphur creek they cross the stream and assume an inconsiderable dip to the west, which can best be noticed from the ridge north of Sulphur creek. They are suddenly cut off and the cretaceous strata then forms the hills, striking NE., SW., and dipping with a high angle to SE. Half a mile above the mouth of Sulphur creek, on its right bank, and also on Bear river above Sulphur creek, I observed light colored shaly slates and gray argillaceous shales; also limestones and some sandstones. The limestone was coarse textured, light yellowish, and quite made up of fossils; another was dark gray, very brittle, and fetid from the amount of organic matter it contained. There I obtained a large number of fossils, different Gasteropoda and several species of Acephala. Following up Sulphur creek I found these strata succeeded and overlaid by sand rocks of white color, interstratified with red and gray slaty sandstones and arenaceous and argillaceous shales, and tilted nearly vertical. Some contain coarse grit and conglomerated portions, and most prominent there is, a little below the crossing of the old road over Sulphur creek, a bed of reddish, silicious conglomerate, forming a rugged crest over the hills, which can easily be traced several miles. Between this and the crossing I found specimens of *Inoceramus* (probably *I. Crispisii*) in a sandstone. Above the crossing I noticed some prominent strata of

white sandstone, rather fine grained and soft, with the same strike from NE. to SW., and a dip of a few degrees from the vertical to the SE. This rock contains beautiful specimens of *Ostrea*, still retaining their enamel, and, by their large number, making the rock in places fetid. Immediately overlying this sandstone is a stratum of bituminous coal, the same which Captain Stansbury mentions in his report, saying: "Specimens of it, although much weathered, burned in a camp fire with a clear, bright flame. It is bright black, but when cut with a knife appears dark brown, and where weathered appears dark brown. It is a superior brown coal." The exposure was good, and, there being no tools at hand for digging, I could not partially succeed in denuding the strata. The first bed is several feet thick, and there is at least one more within a few feet of it separated only by some gray argillaceous shales. It would be easy to get millions of bushels of this valuable material with no other instruments than the pickaxe and shovel in an open quarry. Sandstone and shales continue up Sulphur creek, but the strike and dip change. At the forks of Sulphur creek, about four miles above the crossing, I found many more specimens of *Ostrea* in some strata of sandstone striking S.W. to N.N.E., and dipping to NW.N., forming a range of hills trending to S.W. This strata is similar to the coal bearing rock, only more impure light brownish. It may be the same strata brought up here again. In consequence of the reversed dip I was prevented from examining more closely. At both localities I noticed small springs of weak sulphureous water (sulphureted hydrogen) in the bed of the creek. North of the creek these rocks form considerable mountains for some distance, while the divide to Muddy creek is capped by the tertiary formation. From the crossing of Sulphur creek the strata, forming a ridge in the line of their strike, extend southwest to East Bear river, striking it about $1\frac{1}{2}$ miles below the new road. Near there the coal must crop out again. They also tend in the opposite direction when the range changes more to the west and finally to N.N.W., S.S.E., striking Bear river near the mouth of Yellow creek. By another irregularity of the stratification they crop out again east from there on a fork of Muddy creek, where Colonel Frémont found coal. One mile S.W. of the crossing of Sulphur creek, near the elongation of the bed of coal, is the spring of petroleum mentioned by Captain Stansbury. Several small and shallow depressions in the ground are filled with water and some oil and tar. When exposed to the air the green oil seems soon to be changed to a tar of dark brown color and aromatic taste, which is occasionally made use of by the Mormons and other emigrants for greasing wagons and as a liniment for bruises, &c. This tar, more hardened and somewhat mixed with soil, is found on the bottom and sides of the spring. The affluent is very small, seldom more than two or three gallons. I could scarcely succeed to fill one bottle, with the help of a teaspoon, because some people had taken it off a day or two previous. Next I found the cretaceous strata upheaved at the needles on Yellow creek nine miles west of Bear river. White and gray sandstones, partly fine grained, hard, silicious, partly coarse gritstone, and some conglomerate.

eratic are interstratified with mostly reddish, shaly strata, arenaceous shales, and shaly sandstones, and tilted nearly vertical. Most prominent there is a heavy mass of light colored conglomerate, formed of rounded, silicious pebbles of the size of hen's and pigeon's eggs, with only few larger ones, thickly disseminated with gravel in a mortar-like matrix. It forms the ragged crest of the hill from which it has received its name. This ridge trends towards the head of White Clay creek. I did not notice any fossils in that locality. Similar rocks were observed on White Clay creek near the new road. At the upper forks they were tilted vertical and even more than 90 degrees, and there are large masses of conglomerate. Not all the conglomerates of this district are conformable to the cretaceous strata. Some of them have been deposited after the upheaving of the strata had taken place as a local formation. So those on Porter's creek, (south fork of White Clay creek,) which form remarkable turreted bluffs. Their matrix is also different. It is more purely sandy than that of the others. The dip of the strata on White Clay creek is variable. They are not everywhere exposed, some of the slopes being covered up. Some miles below the upper forks high mountains on the south side of the creek exhibit exposures of yellowish conglomeratic sandstones and of dull reddish sandstone, with a strong dip to W.S.W., and conformably overlaid by nearly horizontal strata, consisting of a few layers of sandstone and light colored shales, capped by conglomerates. Further down I found alternations of impure whitish sandstones and light colored argillaceous shales, dipping strongly to W.S.W., and containing likewise some conglomeratic portions. At the mouth of Porter's creek I again noticed horizontal conglomerates near the tilted cretaceous strata. Higher upon that creek the conglomerates are very prominent, as stated above, and only few other rocks exposed besides. Below the mouth of this fork Captain Simpson found coal, accompanied by heavy strata of white, rather fine grained sandstone, in which I noticed some *Ostrea*. The strata are very much broken and disturbed, and covered by heavy masses of rock fallen from above, preventing me from obtaining a section, but the strata are altogether similar to if not the same as those on Sulphur creek. The coal is black, bituminous, and much like a stone coal. It contains a little sulphuret of iron and gypsum, and where cut with a knife looks brown. The weathered pieces on the surface are brown and like those from Sulphur creek. It burns with a bright flame and black smoke. I have not examined the locality where the San Pete coal comes from, but the specimens from both places are much like each other, only the San Pete is more bituminous, probably because the specimens are fresher, having been dug out further from the outcrop. It also contains gypsum, but I did not notice any pyrites in it. The blacksmiths inform me that it contains much dirt, (ashes,) but gives an excellent heat, though not as good by far as the best stone coals. These different coals are "superior bituminous brown coals," of a more recent formation than the common stone coals.

Further down the creek I observed white sandstones interstratified

with red arenaceous slate and red shales; at the lower end of the cañon the red color predominates, but thence down I noticed again white sandstone interstratified with gray shales like above, the coal. The general dip there is towards W. or NW., and towards the mouth of the creek these strata are capped by some prominent white sandstones with conglomeratic portions. Thence to the mouth of Echo creek similar strata continue, all conformable. I also noticed several beds of pure conglomerate, as in other portions of this formation.

Near the mouth of Echo creek purple conglomerates are largely developed, and nearly horizontal; they form, for some miles, high, vertical, turreted bluffs on the north side of the cañon, while the south side generally presents steep but covered slopes, with only few exposures of rocks, which dip strongly to W.NW. I was doubtful whether the purple conglomerates were conformable—in some places they seem to be, in others not; but I rather think they are a later local deposit. The valley is evidently one of evasion and not one of erosion, with anticlinal strata, as has been stated. Some miles further up the cretaceous sandstones, white, yellowish, and dull red, (mostly with some conglomeratic portions, form both sides of the valley, with a moderate dip to W.NW. The divide is capped by the tertiary formation.

On Weber river, above the mouth of White Clay creek, the same formation was observed; and specimens of *Ostrea* were found in several places, in white sandstones. The stratification is irregular, and in some places reversed by the influence of the igneous rocks which form the divide west of the river and at the mouth of Silver creek and at Kamas prairie come to the water's edge. Mostly the dip is very strong to NW., but I found it also to W., N., and E. In consequence of the dip we get to, relatively, lower strata while approaching Kamas prairie. The western spur of the Uintah mountains formed of granitic rocks, and on their northern slope, in the case of east fork of Weber river, I found altered sandstones, white, or brick-red or gray; and also some strata of gray altered limestone with some fossils, dipping mostly 60 or 70 degrees to W. NW., is variable. I am not prepared to state whether these rocks are older, and if they are really conformable to those of the cretaceous period. I did not notice any coal on Weber river, but by a more detailed examination it may be found there.

The rocks of this formation are not particularly fit to make good soil by their disintegration, but the detritus of the neighboring igneous rocks exercises an improving influence, and the soil is supplied with sufficient moisture from the snow-clad peaks. The vegetation therefore, is better. Portions of the valley of Weber river may be successfully cultivated, but others may be found too high and too cold. They will however afford abundance of hay, while the hills are excellent ranges for cattle in summer.

The divide between Weber river and Silver creek, and between the latter and Timpanogos creek, is formed of igneous rocks; but at the Timpanogos, near Round Prairie, we come to the—

Carboniferous formation.

The extensive developement of this formation in the vicinity of Salt Lake has been made known by Captain Stansbury and Professor Hall. Where it has come under my observation it consists, as it does there, of sandstones, partly highly altered to compact quartz rocks, which seem to form the highest as well as the lowest portion of this series of strata; of a great deal of limestone, mostly dark gray, finely crystalline or subcrystalline, and frequently threaded with numerous veins of calcareous spar or dolomite; of dark bluish gray argillaceous, silicious, and calcareous slates; some argillaceous shales, &c. Nearly all these rocks are more or less altered. In the mountain ranges further west I found these rocks in the immediate vicinity of the tilting igneous rocks, sometimes vitrified and seemingly semi-fused; also whole strata broken and crushed into small fragments, and again cemented in a pudding-stone, or else metamorphosed; but I did not notice there the mica schists, and other metamorphic rocks, which Captain Stansbury found on the Salt Lake.

The carboniferous strata extends west as far as I have been, (to Pass Short-cut,) to the exclusion of any other stratified rocks of older than quaternary age; and, from the imperfect notes we have, it would appear that they are found much further to the west and north. In many places they contain numerous fossils, especially *Croductus*, *Terebratula*, *Spirifer*; also, joints of *Crinoidea*, *Zoophyta*, and *Bryozoa*. Although I have frequently seen dislocations of strata by plutonic agency, I have never observed such a variety of contortions within so limited a space as the strata present in the Timpanogos cañon. Here horizontal, then bent with a sharp angle, or forming vaults, or folded up, so as to break altogether the continuity of the overlaying strata; then rising at once vertically from the bottom of the valley, many hundred feet, to the top of the highest mountains, where they appear horizontal again, as if they never had been subject to any violent actions from underneath. The cañon, forming a deep chasm in these disrupted strata, which reach to the region of nearly perpetual snow, is full of bold gushing springs, some of which form cascades of several hundred feet in height; the cañons near by are also well watered.

I have been informed that some small pieces of coal have been picked up near the head of an eastern affluent of the Timpanogos, in Round Prairie, which, accordingly, has been called Coal creek. Considering the general configuration of the country I can scarcely doubt that this is cretaceous coal. About a mile above the Timpanogos bridge bluish-black shales were noticed, containing crystals of gypsum and efflorescences of a salt which proved to be a mixture of a sulphate of lime and sulphate of magnesia, (perhaps with sulphate of alumina?) Captain Simpson found there a piece which is a mixture of such shale with particles of a brittle anthracite. Although I examined the locality again I could not find a sign of a stratum of coal. In a ravine north of the mouth of the cañon I noticed similar carbonaceous shales, as also near Big Spring, east of Battle creek.

The carbonaceous substance is only disseminated in small particles through the shale, but in some places it may be more frequent, and concentrated in pockets, or even seams or strata. These shales deserve to be followed up and examined in various places by removing the weathered outcrops.

The Timpanogos cañon opens into the great basin, in which, as stated above, the strata of the carboniferous formation, in connexion with igneous rocks, form the mountain ranges. These ranges are all more or less parallel to the Wahsatch mountains, running a little west of north and east of south, quite independent of the dip of the strata, which is very irregular, to east, west, north, and south, and altogether depends upon the single protrusions of igneous rock within these single ranges. This goes to show that in one of the geological revolutions this whole district was rent by numerous parallel fissures, through which the fluid interior burst up, tilted and scorifying or altering the strata with which it came in contact.

Quaternary deposits out of the Wahsatch mountains.

As far as my observations extend no strata of any period later than the carboniferous were observed in the basins west of Wahsatch mountains above the surface of the valleys, nor do the notes of other explorers indicate the existence of any. Besides the carboniferous and igneous rocks we only find some benches of sand or sandy loam partly somewhat indurated, exposed in the ravines. How old recent they may be we can judge only from accessory circumstances. Certainly they do not bear in their lithological character evidence of any great age.

What has, for a series of years, been known as the Great Basin, the country between the Wahsatch mountains in the east, the Sierra Nevada in the west, the divide of the waters of the Columbia in the north, and of those of the Colorado in the south. It has been called the Great Basin because no rivers flow out of it; all those which are formed also end within its limits. In fact, however, this country is a system of smaller basins, independent of each other; it is composed, as far as known, of single wide valleys, many miles long, shut in by mountain ranges, either on all sides or having a communication open between them—in other words, forming basins by themselves or being tributary to other valleys and forming only branches of a basin. Within them each river, each creek, each rivulet or spring sinks sooner or later; many springs not even reach the surface except during the wet season. The bottom of the single valleys is mostly an unbroken level or shallow depression from one end to the other; in some instances it is broken, and a lower plain formed near the central portion of the valley. Along the surrounding heights and round the island mountains which intersect wide valleys, generally elevated "benches" are formed by the accumulation of detritus. They frequently are distinct water marks of considerable width and equal height. Captain Stansbury mentions a place at the northern end of Salt Lake where he counted thirteen such successive benches

the highest 200 feet above the valley; and in regard to Frémont's island, which is 800 to 900 feet high, he says that the water marks reach to near the summit. I never have seen distinctly more than two or three; most likely because I have not been in the lowest portion of the country.

In the wet season many of these valleys form extensive mud flats which cannot be crossed safely, and some of which are salt; when dry these are covered with a solid crust of common salt. Captain Stansbury remarks, in relation to the desert west of Salt Lake: "These plains are but little elevated above the present level of the lake, and have, beyond question, at one time formed a part of it; an elevation of but a few feet above the present level of the lake would float this entire flat to a great distance, thus forming a vast inland sea." If an elevation of a few feet would have such an effect, what would not be the consequence of an elevation of the water of several hundred feet to the highest water marks on Frémont's island? These valleys have evidently once been covered with water, forming an immense inland sea or seas. This no competent observer will doubt; the only open question is, whether this was during the tertiary or quaternary period.

Changes by subterranean actions may have taken place since, but the country generally has not been subject to extensive revolutions, or else we would not find everywhere the perfect level and evidences of undisturbed sedimentary agencies. The tertiary strata on Green river and further east have been disturbed. I hold, therefore, that within the last geological period, at the beginning of the present era, vast inland seas existed here, probably covering the whole basin, and that the bottom of the valleys, no matter how high above the present level of Salt Lake, has been formed by the deposits of these waters, which since have gradually subsided. How this could take place I will show in a subsequent chapter.

The quality of the soil is variable in different localities, but in general it is a sandy loam, very light, and, therefore, well susceptible of irrigation, and all too dry without it. In a few favored spots, where it contains a larger per centage of the fertilizing feldspathic detritus from the igneous rocks, and has been more decomposed by the continued influence of humidity, it is exceedingly well adapted to wheat, vegetables, and root crops; but the large average is poor, even in the cultivated portions, and with the same amount of labor much larger quantities of grain than are raised here can be raised in almost any soil in the States, all the statements to the contrary notwithstanding.

In many places the soil is shallow, and underlaid with sand; in others with a clay, called saleratus clay, which, under the influence of the irrigation, and loosened by the plough, undergoes a decomposition by which salts are formed, or salts existing before are brought in contact with the upper soil and the roots of the plants which are killed by them. Fields on such spots may produce well the first season, less the second, and in the third they are perhaps worthless. Many fields have had to be abandoned on that account. It must be

remembered, moreover, that only a very limited area is so situated that it can ever be irrigated. At Camp Floyd the upper soil is a finely sanded loam, the subsoil very rough and still more sandy, and exceedingly hard when dry; lower down it changes to nearly pure very fine sand, with only a few particles of clay. This, when dry, does not appear sandy, but forms very compact pieces, which readily absorb water, and thereby become plastic, though little coherent; a little more water makes them dissolve into fluid sand. In such material, from a depth of 40 feet, obtained by digging a well, General A. S. Johnston found a number of minute shells, embracing three or four species of Gasteropoda and Acephala, probably belonging to now living locustrine species.

Near Camp Floyd, on the creek, saleratus clay is found in large quantities. It is a gray clay, in which salts from white crystallizations and nodules, or the whole of which is whitish and impregnated with the salts. I found that the portion soluble in water contains some chloride of sodium, (common salt;) some sulphate of calcia, (gypsum;) some organic substance, and a great deal of sulphate of magnesia. With my limited means I was unable to ascertain whether it also contains sulphate of alumina. Mixed with four parts of fine sand it makes a superior material for plastering; and dissolved in water it makes good whitewash, after the rougher portions have settled down. The same clay, as well as the common soil and subsoil thereabout, makes good "adobes," (unburnt bricks.)

Efflorescences of salt, which I collected at Willow Springs, in Skull valley, were nearly pure salt.

In a country of the configuration and situation of the basin we cannot expect to find many springs. The quantity of condensed atmospheric moisture is naturally small on most of the lower chains of mountains, the extent of which, besides, is not large enough to retain the water necessary for feeding many springs, while the valley formation, with its immense horizontal deposits of highly absorbent sand is still less likely to form springs. The few springs are generally found either in the lowest portion of the valleys or on the slope of the larger mountain chains, and they frequently sink within a few feet from the point where they issue. The quality of the water is, in many instances, bad. The water of the mountains is frequently highly calcerous, or impregnated with salts from decomposing shales, while the water of the valleys frequently contains salts of various descriptions from beds of saleratus clay, and other sources. Springs of really good pure water are therefore scarce; but Captain Stansbury justly remarks, that the quality of nearly all the springs is dependent, in a great degree, upon the season of the year. In the spring and early part of summer, in consequence of the large supply by the melting snow, the water is frequently sweet and palatable, while in the dry season the water of the same springs is sometimes totally unfit for use. Many mountain springs deposit calcareous tufa; also the water of Pleasant Spring, on the eastern rim of the desert, which tastes, however, well, has deposited carbonate of lime, especially on the reeds growing it.

Hot and mineral springs.

Besides the brackish springs, there are numerous warm and hot and mineral springs in the limits of the basin and the surrounding mountains, several of which have long ago attracted the attention of travellers, and have been described by Dr. Wislizenus, Colonel Frémont, Captain Stansbury, Captain Beckwith, and others, to which I refer. I only mention the Beer and Steamboat Springs, on Bear river; the numerous hot springs at the western foot of the Wahsatch mountains; the hot sulphur springs at the eastern base of the Humboldt mountains; the boiling springs near Mud lake and in the Honey Lake valley, &c. The water of most of them contains carbonate of lime, sulphate of lime, sulphate of magnesia, some little chloride of sodium, &c. Some are strongly impregnated with sulphuretted hydrogen or free carbonic acid. In the Warm Spring and Hot Spring near Salt Lake City, common salt is the main mineral constituent; and several of the springs deposit considerable quantities of calcareous tufa. In some places pure cold springs issue near the boiling hot salt springs from orifices which have evidently been formed by the deposits of hot springs. In order to explain this, I must point to the origin of the hot springs. In the region of which we speak, several geological revolutions and violent eruptions of igneous masses have taken place at various periods, by which the rocks have been rent and tilted and crushed in a remarkable manner. Many of the fissures, as we find it in all such cases, have been closed imperfectly, and by them the surface waters gain a ready access to the unfathomable depths. By boring deep we obtain warm water, while such fissures undoubtedly extend to a much greater depth than we can ever attempt to reach by artificial means—therefore the water is hot. It may be only heated, or also impregnated with mineral substances found at that depth. This hot water rises again to the surface in consequence of its less specific gravity, compared with that of the cold water, prompted by the forming steam. On its way up it passes through strata of limestone, and dissolves some of it; perhaps, with the aid of free carbonic acid, it comes to sulphurates, which may be imbedded in metamorphic slates, and effects their decomposition, by which is formed sulphuretted hydrogen, sulphuric acid, and, finally, sulphate of lime, of magnesia, &c.

By this process more heat is created, while some of it is lost in the sides of the channels, and by the mixture of hot water with cold water from branch channels. The great quantity of common salt in some of the springs near Salt Lake may either come from the depth, or the hot water may come in contact with water from the lake by branch channels, and carry it up in the main channel. I cannot decide how these causes may be combined in each case, but this seems to be the general process. If some interruption is caused in these subterranean channels by the caving in of some opening, or perhaps by the deposits of the spring itself in the upper portion of the channel where the water, less hot and under less pressure, cannot keep

in solution all the dissolved substances; or if the water finds a more convenient outlet, then the spring will discontinue, or the water of branch channels, less mixed and finally unmixed with hot mineral water, will continue to run in the old channel above the obstruction, and finally form a fresh cold spring in the place of the hot mineral spring.

Two different mineral springs have come under my observation—the little Copperas Springs of Stansbury, $2\frac{1}{2}$ miles west of Muddy creek, on the old Fort Bridger road, and the Warm Springs in Round Prairie, Timpanogos valley. The latter are highly interesting, because they exhibit various stages of the formation and destruction of such springs. I may, therefore, be allowed to give a detailed description of these springs. Nearly the whole portion of Round Prairie on the northwest side of the river is formed of horizontal strata of calcareous tufa, in some places 15 to 20 feet high from the creek, and covering an area of about 4 square miles. On this common plateau four smaller ones have been formed on the points where the springs have chiefly concentrated their action, and on these the numerous springs are raised, or rather have raised their openings, while a few form basins in the plateaus. Most of the springs have the shape of conical tumuli of various height with a circular or oval opening on top, and an oven-shaped cavity inside, wider at the base than near the rim. Their number is very great, if we count all the small ones, and the diameter of the openings varies from a few inches to about thirty feet. Most of them are now dry and filled up to some extent with soil, while others contain more or less water, which is warmer or colder proportional to the quantity of the affluent. The more the deposits of the springs have choked the supplying channels the less water can flow out during a certain time, and the more heat it will lose on the way and on the surface, while the larger and less obstructed affluent will lose less heat in proportion. The temperature of the water varies between 80 and $109\frac{1}{2}$ degrees Fahrenheit. Most of the springs have no visible affluent nor outlet, but the temperature of the water and rising bubbles of gas indicate an affluent, and the exit must take place through crevices in the rock, and makes the ground all around marshy. One of the most beautiful forms is a basin 30 feet long, 12 feet wide, and 18 feet deep, in which the water reaches to one foot and a half to the rim. The northern group of springs is distinguished by the high conic shape with comparatively narrow base. On the western plateau is the highest spring; its cone is about 60 feet high, 100 feet wide on top, and 200 feet at the base: its total elevation above the Timpanogos must be about 120 to 150 feet. The opening on top of this spring is only 12 or 15 feet wide, partly covered with calcareous scum, deposited over fucoid plants which float on the water, and on top of which grass was found growing. This shows how some of the spring openings have been closed up. The top of the spring sounds hollow; the water was found 10 feet deep and 107° Fahrenheit warm; it flows freely over the rim of the cone, and disappears at the base in the pumice-like tufa which it has deposited, and the swampy ground around. The warmest spring,

of $109\frac{1}{4}^{\circ}$ Fahrenheit, is one of the most southern, and forms an elliptical large mount which evidently has had different openings at different times; now all, except one, closed with tufa or filled with scum, and overgrown with a luxuriant vegetation in consequence of the humidity and warmth. The present outlet is four feet wide, and nearly filled up with calcareous scum. It will be closed, probably, in a short time. The water runs freely over the rim, but disappears before reaching the base of the elevation. Some gas bubbles up in all those springs; it has no smell, and seems to be carbonic acid; but after the water had been kept some time in a bottle a distinct smell of sulphureted hydrogen was perceptible on opening the same. The water contains in solution a large amount of solid substances, chiefly carbonate of lime, carbonate of magnesia, sulphate of magnesia, also some carbonate of soda, and a little chloride of sodium. I could not detect anything else with the blow-pipe. The tufa, as well the compact granular kind, which forms horizontal layers, as the pumice-like vesicular, which is deposited by the water running over the rim of the springs, and on the plants which grow in the water, is mainly carbonate of lime and carbonate of magnesia. As a curiosity, I mention that the warmth of the springs attracts innumerable rattlesnakes. Their main resort is between the large slabs of tufa at a dry and shattered spring cone.

A great deal of tufa has been deposited also at Big Spring, northeast of Battle creek. The water of that spring tastes somewhat like that of the Warm Springs, but is not altogether unfit for drinking.

The igneous rocks.

The vast changes which have taken place in configuration of the surface of the earth, at certain places and periods exhibiting themselves in the most violent disruptions and dislocations of the solid crust, while at others working only limited alterations, and thereby either sweeping off at once all animal and vegetable life, or not less certainly, but more quietly and gradually replacing it by one more in harmony with the new state of things. These changes, I say, have frequently been accompanied by outburst of fluid igneous masses from the interior of the globe, which have formed the igneous rocks. They have taken place not only at the close of the great geological periods, but also, although more limited in their extent, during those periods; and even during the comparative quiet of the present era, they occasionally manifest themselves. The igneous rocks differ in their mineralogical character, but can be classified in groups of analogous composition; and all those formed within certain, mostly extensive, periods and limits, originating from the same hearth, bear evidence of it in their composition. They are similar to each other, or at least belong to the same tion. It is evident, therefore, that the history of the igneous rocks of a region and of their relation to the stratified rocks of the different formations, forms as essential a part of the geology of a country as the history of the extinct animal life, both together only make a whole. The country under consideration is peculiarly interesting in

regard to the igneous rocks, and I therefore propose to discuss them to a greater extent than it has generally been done in reports of this kind. If more attention is paid to this subject, we will be enabled to give a complete account of the phases through which this continent has passed. This will be easier than in most other countries, because we seldom find anywhere else lines so broadly and distinctly marked.

The igneous rock of the examined district belong to different groups, distinct in their mineralogical composition; they are porphyritic, granitic, dioritic, and some perhaps even more recent, trachytic. The first igneous rocks, after leaving the South Pass, were found near Weber river, forming the ridge west of that stream towards Snyder's creek, Silver creek, and the Timpanogos; also on Silver creek along the new road, and down Timpanogos river to Round Prairie. I have a series of specimens from these localities. They differ in their appearance, but a careful examination shows that they are all *porphyritic diorites*.

The dioritic rocks are composed of oligoclase or labradore, with blackish green hornblende, and frequently quartz and dark colored mica. One of the most prominent European mineralogists, who has paid particular attention to the classification of the igneous rocks Professor Gustavus Rose, remarks: "That one might frequently be tempted to group the American diorites together with the andesites," which derives its name from the Andes mountains, where it is largely developed; it is composed of oligoclase or andesine, hornblende, and brown mica in a highly quartzose matrix, and belongs to the trachytic rocks, which are, generally, of more recent origin than the diorites because, he says, "the age and general development of the American diorites seem not much to differ from that of the trachytes, while in other countries the diorites are much older and stand nearer to the granitic rocks." I find this remark confirmed, and have even been doubtful whether the rocks in question were not andesites. Only by a careful examination and comparison of the mineralogical characters of the rocks, and by testing the relative fusibility of the composing materials with the blow-pipe, I have been led to decide to the contrary. I will give a description of the single specimens:

1. From the summit between Silver creek and Timpanogos. This rock may be regarded as the most normal of these porphyritic diorites. It has a dark gray granular, highly quartzose matrix, which, under the microscope, is dissolved into minute crystals. It contains many small crystals of white labradore, also dark brown mica, and less distinct but very numerous throughout the matrix, slender columns of dark green hornblende.

2. From the immediate neighborhood of No. 1. It is much less crystalline, more sub-crystalline and uneven on the fracture. The matrix is grayish green, (or rather a mixture of bright green, dark brown, and white, the colors of the single mineral,) with many minute crystals of greenish white labradore and reddish brown columnar mica. The small crystals of the latter may, on a superficial examination, be readily mistaken for hypersthene. No other minerals are crystallized out.

3. From the same locality; stands between 1 and 2.

4. From the high conic mountain at the northern end of Round Prairie. The weathered surface is reddish brown. The gray matrix is granular and composed nearly altogether of microscopic crystals; it is thickly studded with mostly small crystals of white labradore, laminar and columnar crystals of dark brown mica, and some quartz, which is more frequent in the matrix. No hornblende is crystallized, at least not large enough to be recognized.

5. From near 4. It is the same rock more completely crystallized; it contains little matrix, and besides the labradore and quartz, and the lamellar hexagonal columns of brown mica, slender columns of greenish black hornblende can well be distinguished.

6. From the same place. It has again much more dark matrix. The crystals of labradore are less numerous but larger; the mica is dark green, the matrix quartzose, and hornblende could not be distinguished.

7. From the divide between Weber river and Silver creek. It is a compact, granular dark gray rock, more light-colored near the weathered surface. The white labradore and the hornblende are imperfectly crystallized. Small spots of oxide of iron indicate that more hornblende, or probably mica, has decayed. Other pieces are a little better crystallized.

8. From near 7. It contains only little whitish matrix, and is mostly labradore in tabular crystals, in its appearance much like some vitreous feldspar or sanidine, together with many columnar crystals of dark green hornblende, mostly thin, and a few laminae of brown mica. This specimen has quite the appearance of a trachytic rock, but still I must consider it a diorite.

9. From Weber river below Silver creek. It has only very little gray matrix between the coarse crystals of labradore, the bright hexagonal laminae of brown mica, and the grains of quartz. This rock is nearly granitic.

From the above we see that the minerals taking part in the composition of this group of rocks are: labradore, dark brown mica, quartz, and dark green hornblende. The latter was found only in well crystallized specimens, and the want of one or the other of these constituents in some of the rocks must be considered as local. It seems, however, that the more the mica prevails and is well crystallized, the more does the hornblende disappear and quartz come in. We also find a new proof for the rule: that from one specimen, perhaps picked up indiscriminately, it is impossible to draw any correct conclusions on the general composition of the igneous rocks of a district, by which we might be enabled to recognize a contemporaneous formation at a distant point.

Along the valley of the Weber river, from Kamas Prairie to Echo creek, stratified rocks were found, with the exception of one place below Silver creek. The igneous rocks make their appearance only towards the crest of the ridge. In many places they form conglomeratic masses on top of the stratified rocks; so it is on Weber river near the lower end of Kamas prairie, and below Silver creek, and on the ridge between those two places; also on the Timpanogos, above

Round Prairie. The pieces of dioritic rock are imbedded in a similar matrix, and the deposits seem to be formed from the loose pieces of rock and the finer particles, or ashes, after the eruptions had taken place. In some places they may be the result of an overflow of the igneous matter.

On the west side of Kamas Prairie I found much of the rock, 10, which looks like a regular lava, forming also dykes. It is a dull gray finely vesicular rock, with a great tendency to crystallization, containing many indistinct crystals of a blackish green augitic mineral (not olivine) and some laminae of brown mica. I am not certain if this rock is of much later origin than the others, or formed at approximately the same time.

The next igneous rock is a granitic rock, forming high white barren pinnacles on the north side of the mouth of Dry Creek cañon, northeast of Utah lake. Similar heights were noticed, from the distance northwest of Round Prairie, and low knobs of the same, scarcely sticking out of the ground, west of the Jordan towards Cedar valley. A similar rock, of which, however, I have no specimens for a careful comparison, was observed on the summit of the western spur of the Uintah mountains, between the head of Porter's creek and the east fork of Weber river. The rock from Dry creek, 11, is a crystalline mixture of milk white oligoclase, quartz, and dark green mica. This is not the normal composition of the granites, and comes nearer to that of the *diorites*; it indicates that this rock dates from a period not very far distant from that of the porphyritic diorites. From them it is distinguished, however, by its complete crystallization, by the nature of its feldspathic compound, and by the color of its mica. Green mica was found only in one of those, No. 6, which is a tumbling rock from the neighborhood of No. 11, perhaps even from the line of contact between the different dioritic rocks.

Among the igneous rocks west of Camp Floyd, the oldest one is the *porphyritic* rock which forms the mountains at Pleasant Spring, on the eastern rim of the desert. No. 12. It has only little matrix, in which light pink and white are mixed. Most prominent are the crystals of rather dark colored quartz, and the numerous but smaller crystals of light green highly pellucid feldspar, (orthoclase.) I also noticed many small scales of dark green mica. In other portions of the rock the pink prevails, and in others a light greenish yellow without any red; but in all of them the crystals of quartz are most prominent.

13. From Pleasant Spring is the same rock, differently developed. Most prominent are numerous laminae of brown mica, but I could also distinguish small crystals of white orthoclase and quartz disseminated in a bright red feldspathic matrix, which is softened and somewhat rotten by the influence of the spring. The color has faded a great deal. It contains in some places large green spots, thus forming a transition to the next.

14. Was found near 13, at a little lower level. It has a bright green feldspathic matrix with many particles of quartz, white orthoclase, and dark green mica, and encloses numerous small fragments of altered silicious rock. At first I thought it was a secondary deposit; but after

a careful examination, and finding similar green spots in 13, I regard it as a much decomposed porphyritic rock, which, while fluid, came in contact with sedimentary rocks, and inclosed particles of them.

The other igneous rocks of that region are of more recent origin; 15 was obtained a short distance south of Pleasant Spring, at the foot of the mountain, where it forms a horizontal dyke. It consists of partly large, partly small, angular pieces, closely joined together and cemented by a little calcareous spar, or the like. It has been fluid, and must have split into those fragments while cooling. The rock seems to belong to the *dioritic* group, and may be coeval with those from Silver creek. It is most like No. 1, a compact gray matrix with an uneven fracture, containing numerous small crystals of reddish white labradore, (?) and minute scales of dark brown mica; many yellowish spots indicate that a great deal of mica, or perhaps hornblende, has been destroyed. I noticed, besides, some uncrystalline bright green particles. Where less crystalline, it is uneven and brown, gray and green, on the fracture.

16 forms a similar outcrop several miles north of 15. It is much more uniform; a light bluish gray compact matrix with a conchoidal and slightly splintery fracture, and only few signs of feldspathic crystals. It forms the transition between 15 and pieces like 17, which occur in the same outcrop, although specimen 17 itself was found as tumbling rock between the desert and Skull valley. It looks basaltic; has a grayish black very compact matrix with a conchoidal fracture, and exhibits numerous minute dark green particles of a vitreous mineral, too small to be determined. This rock might properly be called melaphyre, which rock belongs to the dioritic group, and frequently becomes amygdaloidal or vesicular, like 18 and 19.

18 is another specimen of the same outcrop. It is a vesicular dark gray rock, not unlike some lava; most of the cavities are filled with white crystals of some zeolithe. The color of the surface is brown. 19 is a similar irregularly vesicular rock, found scattered east from there in large quantities. It is dull blackish gray; the cellules are empty, or have a yellowish coating.

The difference between these specimens, Nos. 15 to 19, is great; but we must consider that igneous rocks which do not form mountains by themselves, but only fill fissures in other rocks, have frequently dissolved portions of the adjoining solid masses, and thereby been changed to some degree. The different mode and time of cooling exercises a still greater influence on their general appearance.

Seventeen to twenty miles southwest of Pleasant Spring, south of the route, I noticed igneous hills. The rock is most like No. 16, but not quite the same; of light bluish gray color, in places containing crystals of quartz, while in others it does not show any sign of crystallization, and is very uniform. It rings clear under the hammer, and numerous cavities, some of them large, are worn out by the atmospheric agencies, making the rock vesicular. It belongs to the same period as the others. On the slope of one of those hills I found a quartz rock, with crystals of quartz in the purely white quartzose matrix, which gave it the appearance of a porphyry; but weighing all

the circumstances, I must consider that rock as a highly altered semi-fused sandstone. The same igneous rock continues north across the gap south of Pass Short-cut, and there caps the mountains, the lower portion of which is made up of tilted carboniferous rocks. These strata, heated from above and below, are much altered; some have turned brick-red. The overflow of igneous masses does not extend north of the pass.

Similar igneous rocks are largely developed in other parts of the country. Captain Stansbury mentions basaltic hills (compare No. 1) north of Salt lake, and porous trap and porphyry; and from Dr. Schiel's notes to Captain Beckwith's report, it appears that porphyritic diorites are common between Sangre de Christo pass and the Wahsatch mountains, and extend westward over the great basin; but such distinctions are generally made without system, and are, therefore, not available for a systematic classification of the rocks.

I did not find any obsidian, which seems to be common further north.

Minerals.

In a district where the carboniferous formation and porphyritic rocks are developed we might expect to find some metallic minerals although the devonian and silurian strata are generally more metallic. No such minerals have, however, been found in this district as far as I know, with the exception of the magnetic iron ore, which Captain Stansbury noticed near the north shore of Salt lake, and some other iron ore and iron pyrites in the alum slates. Of other mineral substances we find mentioned in the reports: coal, alum slate, magnesian alum, common salt, sulphate of soda, sulphate of magnesia and gypsum. Dolomite occurs in large crystallized masses in the altered lime stones. It has been reported frequently that salt exists as rock salt in the southern part of the Wahsatch mountains. From experience I have become very cautious in regard to reports of mineral substances; and in one place where salt is said to be found in red clay, other reliable witnesses have only seen crystallized gypsum. I hope to have an opportunity to visit the southern part of the Wahsatch range, which in this and various other respects promises to be a highly interesting field for a geologist.

Rumors locate lead and silver mines near the southern line of the territory.

General review of the geology of the district.

The oldest stratified fossiliferous rocks of which we know in the district belong to the carboniferous formation, and even part of the underlying metamorphic states may be altered strata of the same. During a part at least of the carboniferous period this country, therefore, formed the bed of an ocean. With the numerous fossils of marine mollusca we only find a few plants. We cannot tell how far these waters extended; but as we find more carboniferous rocks

near Fort Laramie, and the same formation so largely developed in eastern Kansas and the Missouri and Mississippi valley, it is most likely that all these strata have been deposited in the same ocean, no matter how they have been disrupted afterwards, and partly been swept away. I am not prepared at this time to point out the equivalent of the strata here among the sub-divisions of the more eastern deposits. Changes took place, and this country became dryland. In other portions of this ocean strata have been formed which are evidently of later origin than any observed here. We cannot know whether their equivalents have ever been formed here and have since been destroyed, or if this portion of the ocean became dry at an earlier period.

The porphyry of Pleasant Spring bears in its composition evidences of great age. Such porphyries are generally assigned to the later portion of the paleozoic period, and as the carboniferous strata are tilted by it I suppose that its eruption was in connexion with the changes alluded to.

The normal granites, composed mainly of orthoclase, oligoclase, quartz, and mica, and the syenites belonging to the same group and made up of orthoclase and grayish black hornblende, with or without oligoclase, mica, and quartz, are generally, if not always, older than the porphyry. The granite of the Wahsatch mountains, No. 11 of the foregoing, is no normal granite; it lacks orthoclase. In the normal syenites the hornblende disappears and quartz becomes more frequent, when the mica begins to predominate in the composition. With the porphyritic diorites described above, Nos. 1 to 9, the same rule seems to prevail; and if we apply it to No. 11 we find that it must be considered as a diorite, not as a granite. It belongs to the same large group with the porphyritic diorites, but is distinguished from them by its complete crystalization by the different nature of its feldspathic constituent, which is oligoclase, while in the others it is labradore, by the color of its mica and the total absence of hornblende. The difference is considerable, and we therefore may justly presume that its eruption took place at a different time, although within the same large period as that of the porphyritic diorites, and much later than that of the porphyry of Pleasant Spring.

Many of the mountain ranges of this continent which have been described as granite are most likely formed of such abnormal diorite. I have myself, in my report upon the route explored by Lieutenant F. T. Bryan, Topographical Engineers, in 1856, described the rocks of the Black Hills as granites and syenites; the granites composed of light red feldspar, quartz and black mica, the syenites of red feldspar and black hornblende, partly with quartz. Not fully appreciating the importance of such nice distinctions, I have not stated if the feldspathic mineral is feldspar proper; that is, orthoclase or oligoclase; nor if the hornblende is greenish, or grayish black. A new examination of those specimens will probably show that these rocks are diorites, composed normally of oligoclase and greenish black hornblende, with occasionally quartz; and that where the hornblende disappears it is replaced by black mica and quartz, as in No. 11.

Cretaceous strata are strongly tilted on the eastern slope of the Black Hills, near C  che la Poudre creek, which goes to show that these mountains have been raised during or at the close of the cretaceous period. The granites might have been formed previously, and heaved up together with the cretaceous strata; but all the probabilities are to the contrary, and the very composition of the rocks, if dioritic, would speak for their late origin.

The country continued dry land probably during the whole of the triassic and jurassic periods. It may have undergone vast changes, but as no marine deposits were formed we have no records of that time. Terrestrial deposits are naturally always subordinate, and generally so loose that the next great revolution easily destroys what has been built up during the preceding time of quiet. The forces acting during those two periods did not help to accumulate strata, but they certainly worked great destruction among the paleozoic strata deposited before in this district, which must have furnished the material for terrestrial formations and marine deposits beyond our limits.

Other convulsions rent the surface of the globe, producing the changes which opened the cretaceous period. The waves rolled again over this country, and the cretaceous strata were deposited which now occupy the eastern slope of the Wahsatch mountains. As they contain many conglomeratic portions, it would seem that the ocean was shallow there, and the dry land not far off; because pebbles are rounded by the action of the waves near the shore, and not likely to be carried far thence by water of any considerable depth. The coal beds point to the same conclusion. I therefore suppose that the eastern portion of the great basin was elevated above the waters and formed the western terminus of the cretaceous sea in this neighborhood. No cretaceous strata are found now in that region, and if such should have been formed there, contrary to my supposition, they have since been swept away without leaving a trace. Perhaps the Wahsatch mountains existed already; certainly not in their present shape, but one portion of the dioritic rocks may have erupted at the beginning of the cretaceous period, and with the paleozoic strata on their slope formed a barrier to the waters.

The close of the cretaceous period, or probably that of the main sub-divisions of that period, is marked by the eruption of the various dioritic porphyries and diorites; a few of them may be older. During that epoch, I suppose, most of the mountain ranges were formed which now occupy the centre of the continent from the Black Hills to the Wahsatch range, because we find the cretaceous strata tilted on the slope of many of those mountains, while the tertiary rocks overlie them unconformably and much less disturbed. During the (earlier part of the) cretaceous age probably one ocean covered nearly the whole area from the great basin to the Missouri river, extending far towards north and south; and only when these mountain ranges were formed the different basins were marked out.

Although the "backbone" of the continent existed, the continent itself cannot have had its present configuration. At the beginning

of the tertiary period an ocean washed the base of the mountains, now elevated several thousand feet above the sea. We have an evidence of it in the marine tertiary deposits of the Green River country, and the estuary and fresh water formations northeast, east, and southeast of the Black Hills indicate vast inland seas. The latter date from the middle of the tertiary period, according to Dr. Hayden and Professor Leidy.

I avail myself of this opportunity to correct a statement made in my report of 1856. I have described the country east of the Black Hills on Pole creek, near the forks of Platte river, and on the Republican Fork, as covered with quaternary deposits. Last summer I had an opportunity to see the same formation much more perfectly developed on the lower North Platte river, and I have come to the conclusion that the greatest portion of it is an equivalent of the deposits in the Bad Lands on White river, described as miocene tertiary. I found no fossils, except a few fragments of bones. The plainly marked fresh water character of these strata had involved me in that error.

The present era came, and with it the last great revolution of the earth. The forces seem to have acted very equally over an immense surface, and with enormous power; they lifted up the whole centre of the continent several thousand feet, without anywhere, in the district which I have examined, actually bursting the surface and directly and violently disturbing the tertiary strata. These were brought out of their horizontal position, but only raised under small angles. I compare the whole action with the forming of a large bubble. The waters running off to all sides naturally carried away a large portion of the mostly loose tertiary strata and gradual disintegration, and creeks and rivers have since done an incredible amount of destruction among them. In the present Green River country the surface was also raised; but as the pressure subsided again, the surface between the mountains seems to have given way more than the surrounding ranges. In that way the strata must have attained the moderate dip towards the centre of the basin.

The Great Basin—I speak directly only of the eastern portion which I have seen and know of, although the remarks, probably, can be applied to the whole—seems to have been elevated above the cretaceous ocean. The rocks, then, are porphyry, metamorphic slates, and paleozoic strata. The convulsions followed, connected with the origin of the dioritic mountains. The Wahsatch range was formed over a great fissure, running nearly from north to south, and numerous fissures parallel to this one were caused by those shocks all over the basin. In many instances the igneous rocks (Nos. 15 to 19 of the foregoing) passed up through these fissures; by others only heavy faults were caused. Some doubt remains in regard to the time when the fissures were formed; their parallelism to the Wahsatch range speaks decidedly in favor of the period which I have mentioned, and so the mineralogical composition of the rocks seems to do; but, as the latter is not very plain, I cannot positively say that these eruptions did not take

place later, perhaps in connexion with the last great changes at the close of the tertiary period.

The position of the tertiary Green river formation to the Great Basin is anomalous; it is such, on the dividing ridges, that it would seem the basin must have been filled with the same ocean in which those strata were deposited; yet we do not find any traces of like deposits in the basin, and it is evident that the valleys cannot have been formed in that ocean. After handling the question in every possible way, I have come to the conclusion that the present difference of level did not exist at that time. The eastern portion of the basin was dry land, while the Green river country was a sea; and the elevating forces spoken of must have raised the country east of the Wahsatch range more than that west of it. These changes of level threw the water of the Green river sea in the basin, which must have had nearly its present configuration; and to the sea or seas thus formed the valleys owe their present character. Their remains are found in the Great Salt lake, Utah lake, and others. In order to show how these waters could subside, since the beginning of the present era we only need to examine into the natural course of events. By applying the physical laws, we find that it could not be otherwise.

We have a vast inland sea, elevated 4,000 to 5,000 feet above the ocean, surrounded by mountain ranges as many thousand feet higher; beyond which, to the north, east, and southeast, mountains and elevated plains extend for many hundred miles; while on the west and southwest side the ocean is nearer, but separated from it by a gigantic range of mountains, the summits of which tower high above the clouds. The country all around will then be well supplied with moisture; soil will be formed and covered with plants best adapted to its properties and location. At such an elevation above the ocean the air is thin; the evaporation fast. Part of the vapors will be condensed again in the same district, and on the neighboring mountains; but the remainder will be carried beyond and lost irreparably, feeding rivers which run away to the far distant oceans. The climate of the country to the north, east, and southeast, is too dry, even if we make allowance for a better state of things at that time, and the ocean too distant to make an adequate return; while to the west and southwest the high mountains turn off the clouds, and effectually prevent the passage to the basin of more than a very limited amount of moisture; moreover, as their eastern base is much higher than the western, they will more favor the egress than the ingress of clouds. The loss will be small at first, and scarcely felt; but taking place continually, through hundreds of years, the effects of it will gradually begin to show themselves. The depths of the waters will diminish inch by inch, foot by foot; the shallowest spots become dry; but still the country around will be sufficiently supplied with moisture, and capable of sustaining vigorously vegetable and animal life. Such seems to have been the condition while human beings lived on this continent, at a time of which we have no records. Traditions point to the country round this sea as the home of powerful tribes, which afterwards, as the country became more and more inhospitable, migrated

to the south. The remains of ancient towns in the northern part of New Mexico, much superior to the pueblos of the Indians which now inhabit that country, and of the origin of which, and of the time when they were inhabited, the present generation has no knowledge, seem to indicate a more prosperous condition of the country in former times. I refer to the pueblos on the Rio Chaco, visited and described by Captain J. H. Simpson, Topographical Engineers, in 1849,* and to Old Zunia, which, however, seems to be of later origin than the others. It is also an established fact, that extensive forests, the remains of which are still found, have existed in some of the central portions of the continent where now no tree relieves the monotony of the barren waste. Volcanic eruptions may have been the immediate cause of the desolation of single spots, but we must look to agencies affecting more equally the whole country in order to explain the changed state of the present time.

The quantity of evaporated water decreases in the same measure as the shallowest places become dry, and therefore the surface of the water smaller. The quantity of condensed moisture and the humidity of the surrounding country decrease proportionally; the air becomes more dry, and the evaporation, instead of actually decreasing proportional to surface of the sea, will rapidly increase, and the shore-lines become more and more contracted. The springs, creeks, and rivers will be reduced or discontinued altogether, the surrounding country become barren and depopulated. Thus the present condition of the basin and surrounding country was produced.

In the spring the snow melts in the mountains, and also the little that is generally in the valleys, and has not disappeared by evaporation. The springs give an abundance of water, which also comes to light in some washes, dry at all other times; the surplus of water of the branch valleys collects in the main valleys; in flat places it spreads out and converts them into impassable mires. In the absorbent sand of the valleys the water soon sinks, and the increasing heat of summer dries the surface. During the other seasons the affluent is small, and the subterranean reservoirs, formed of sand which has been saturated with water in the spring, are emptied by evaporation and by supplying the creeks with which they connect. The creeks and rivers form either lakes, the water of which disappears by evaporation, and the surplus of which, in the wet season, is absorbed by the adjoining sand flats, or they sink in the thirsty sand without even forming lakes. A point must be reached where the quantity of water in the basin is so small that the loss by evaporation is balanced by the quantity of condensed atmospheric moisture. This system of subterranean reservoirs, by diminishing the evaporation, must be regarded as exercising a very favorable influence on the condition of this district; without them the water would all evaporate in the first part of the summer, and many springs would be dry in the fall. The country would be still more desolate than it is now. In many of the valleys the balance may have been attained, in others the quantity

of water may still be diminishing. This is said to be the case in the Salt Lake valley.

Some persons explain this decrease of water in the Salt lake by subterranean outlets, but that cannot be, because the country many miles around is considerably higher than the level of the lake, and even suppose it was so in this one case, we certainly could not account, by a similar reason, for the sinking of all the creeks and rivers nearer to the centre of the Great Basin. The water of Salt lake is a concentrated brine, notwithstanding the large, continual affluent of fresh water by the Jordan, Bear river, Weber river, and others. If there was a subterranean outlet, the salt water would be carried off, and the lake would become a fresh water lake. This shows most conclusively that the whole large affluent is consumed by evaporation. Captain Stansbury, Topographical Engineers, was naturally struck with the appearance of the country in the vicinity of the lake, and expressed his opinion that it was once overflowed, but he attributed the receding of the lake to partial elevations of the country around it. I cannot concur in that explanation. Even suppose that changes of level had taken place by subterranean agencies, this does not at all explain the remarkable features of the country, nor what has become of the water, the quantity of which has been, beyond any doubt, much larger in former times. The changes which have taken place are all the natural consequence of the geographical situation of this country, and we are not compelled to look for extraordinary means to accomplish them. I consider the present condition of this region as one of the greatest evidences of the enormous effects produced by the gradual and unostensible agency of nature.

Another question presents itself. Have the waters which once covered the country been fresh or salt? I am not prepared to discuss this question thoroughly, but I am inclined to suppose that the water has been salt or brackish. The numerous salty substances in the soils and clays point to it. That in many of the valleys no salt is found now does not prove the contrary; they may have lost it. The new supply of water has naturally always been fresh; it has dissolved the salts and carried them off to the lower valleys. Utah lake has lost its salt by the rivers of fresh water which empty into it, and the Jordan which runs out of it; while the Great Salt lake, without outlet has become a concentrated brine. There are, however, salty springs, and it is possible that all the salt derives its origin from that source.

On Wells.

It may be proper, in connexion with the foregoing, to discuss the question, if or how water can be obtained at suitable points of the valleys or basins? My remarks, in the following, can be applied directly only to the valleys traversed by me with Captain Simpson, but most likely they will be correct, also, in regard to a considerable district beyond.

If roads should be located over that country, they will necessarily have to strike the foot of the main mountain ranges at convenient

distances, in order to get to grass; and their supply of water will have to be procured in the same places. In some instances running streams will afford both. In order to obtain water at all seasons at such points on the slopes, or at intervening points in the valleys, where it might be desirable to establish watering stations, where, however, grass for camping is not to be found, it may be necessary to resort to artificial means. Artesian wells are out of the question. The configuration of the country and the disruption of the strata are such that no result can be calculated upon, and, in many instances, igneous rocks would be struck with the borer. If, accidentally, water should be obtained, it might be salt, or sulphurous, or hot. From the digging of wells I would expect more. I do not pretend to say that water would be obtained everywhere by digging deep enough; by no means; but I suppose that in many instances the distances between water might be shortened by wells, dug in such localities as would appear most favorable for the purpose, or by improving small and insufficient springs.

a. Water may be obtained in such places where small and insufficient springs come to the surface, but sink within a short distance—such as Pleasant Spring. They can be recognized from the distance by a growth of rushes, willows, &c., on their margin, and only require to be followed up to their sources, cleaned out, and provided with some tanks, large enough to hold water for one or two days for a large train. If such springs cannot be relied upon during the whole year, their sources ought to be followed up to the very rock, and, eventually, large subterranean tanks should be constructed.

b. Similar springs may exist without ever coming to light, in consequence of the gravelly and sandy nature of the surface deposits. We may expect to find them in indentations of the mountains where the vegetation is fresher than elsewhere; where there are, perhaps, green bunches of greasewood, while it is dry all around. I would, likewise, dig down through the gravel to the solid rock in places where heavy washes come out of high and wide mountains, and I am confident that water would be found in them in many instances. Such wells might be made accessible to stock, and if the quantity of water should be small, it would, generally, be easy to find a suitable narrow place where a dam might be constructed across the gully at a comparatively small expense. The reservoir thus formed should be covered to keep the water cold and lessen the evaporation. In such a way water might probably be obtained at a point on the west side of General Johnston's pass.

c. Water might be obtained in the valleys, at some favorable places in the washes, by digging to a moderate depth. During the flood time the water collects in rivulets, which run from the branch valleys to the main valleys, and form "washes," in the gravelly bottom of which the water sinks, and flows underground, as soon as the highest flood is over; at last it may discontinue running altogether. Some of the washes may have been formed while there was more water in the valleys, in former times, and it may never be found in them running at present. In many instances the digging in washes would not be

more advantageous than in any other place—only a few feet would be gained in depth—but there are places where the valleys contract, where, perhaps, near the mouth of a branch valley, a spur of hills, or only some strata of underground rocks, run across the opening and make it still narrower, forming a dam behind which the water will collect, and through the openings of which or over which the water must run, if any should run from the branch valley to the main valley. Suppose such a dam be twenty-five feet below the surface, and a wash in that place fifteen feet deep, then the signs of humidity will probably show themselves at the bottom of the wash, but not on the surface above; and by the appearance of the wash we are enabled to judge which may be the most favorable spot for locating a well. If it should be necessary to dig any wells in valleys, such places should be tried first. The water obtained in that way would probably be brackish and unfit for drinking, in case the respective valley contains salts. I have noticed two places of that kind—one several miles west of General Johnston's pass, where a heavy wash enters the gap, toward the desert, and the other in the wash at the mouth of the branch valley and spur of mountains half-way between Pleasant Spring and Pass Short-cut. In such instances the permanent wells should be located to the side of the washes, out of the flood range.

d. Where none of the enumerated facilities should present themselves, it might be necessary to dig wells of great depth. The result then, would be very uncertain; their depth would render them less serviceable, and the water would, in many cases, be inferior. I have spoken of the reservoirs of water formed of the absorbent sand at the bottom of the valleys, and with deep wells we would try to strike that water. In order to be unfailing, they must be located so that they strike the lower portion of these reservoirs. The dip of the strata is very irregular, and they are so much disrupted that we cannot exactly know the configuration of the bottom of the valleys below the lake deposits, much less give a rule in regard to it. I must, therefore, be left altogether to the judgment of the superintendent to select the preferable place in every instance. These experiments will always be uncertain, and, in order to save time and labor, I would recommend, in all these cases, to examine the depth to the water with an earth-borer, in several places, before locating the well permanently.

In all cases the walls of the wells should be secured with timber or masonry; special care must be taken to secure the lower part, as high up as the water may rise in the wet season, because the fine sand at the bottom is likely to wash in the wells and cause them to cave in. Wherever feasible, they should be made accessible to stock; and where it cannot be done, proper arrangements for watering the same must be made.

To enter into the details of the execution of the work would carry me beyond the limits of a geographical report. I, therefore, conclude with the remark that experiments of this kind should be made during the dry season, the second part of summer, fall, and first part of winter; because in the wet season water can be found

in many places where later in the year there is not a drop. Only in the dry season the experiments would be decisive.

Respectfully submitted.

H. ENGELMANN, *Geologist.*

Captain J. H. SIMPSON,

Chief of Topographical Engineer Department,

Department of Utah.

APPENDIX B.

Itinerary of a wagon route from Camp Floyd to Fort Bridger, explored and opened by Captain J. H. Simpson, Corps Topographical Engineers, under instructions from the headquarters of the department of Utah, in the fall of 1858.

Localities.	Intermediate distances in miles, measured by odometer.	Total from Camp Floyd.	Wood.	Water.	Grass.
Camp Floyd.....					
Bridge over Jordan.....	14				
Lehi, forage and fuel purchasable.....	2 $\frac{1}{2}$				
Am. Fork settlement, (Lake City,) forage and fuel purchasable.....	3				
Battle creek, (Pleasant Grove,) forage and fuel purchasable.....	3 $\frac{1}{2}$				
Mouth of Timpanogos River cañon, forage and fuel purchasable.....	6 $\frac{1}{2}$				
Beautiful Cascade.....	4 $\frac{1}{2}$				
First camping place for small commands, grass on bench.....	$\frac{1}{2}$				
First wide place where ox-teams can corral.....	2	35 $\frac{1}{2}$	W.	W.	G.
Good camping places at short intervals all along Timpanogos to within one mile of upper cañon.....	18	53 $\frac{1}{2}$	W.	W.	G.
End of cañon.....	2	55 $\frac{1}{2}$	W.	W.	G.
Last camp on Timpanogos.....	1	56 $\frac{1}{2}$	W.	W.	G.
Across the divide to Silver creek.....	6	62 $\frac{1}{2}$	Willow and sage.	W.	G.
Parley's Park road.....	3 $\frac{1}{2}$	66 $\frac{1}{2}$	Willow and sage.	W.	G.
Across divide to Weber river; good camping places all along Weber to mouth of White Clay creek.....	6	72 $\frac{1}{2}$	W.	W.	G.
	12	84 $\frac{1}{2}$	W.	W.	G.
Good stopping places all along White Clay creek to commencement of lower cañon.....	3 $\frac{1}{2}$	88	W.	W.	G.
End of cañon.....	$\frac{1}{2}$	88 $\frac{1}{2}$	W.	W.	G.
Good camping places all along White Clay creek to commencement of upper cañon.....	15	103 $\frac{1}{2}$	W.	W.	G.

APPENDIX B—Continued.

Localities.	Intermediate distances in miles, measured by odometer.	Total from Camp Floyd.	Wood.	Water.	Grass.
Last camp on White Clay Creek valley.....	5½	109	Willow	Water in pools.	G.
Main branch of Bear river.....	9½	118½	W.	W.	G.
Middle branch of Bear river, water not constant.	2½	121½	Willow	-----	G.
East branch of Bear river	½	121½	W.	W.	G.
West branch Sulphur creek, small spring about ¾ mile below.	5½	127	Willow	-----	G.
Middle branch of Sulphur creek.....	3	130	Willow	-----	G.
East branch of Sulphur creek, junction with Fort Supply road.	½	130½	Sage	W.	G.
First water in ravine going down to Muddy.	5½	136½	Sage	W.	G.
Grass, sage, and willow fuel all the way down the ravine to Muddy, and water at intervals in springs; cedars on the bluffs of Muddy.	5½	141½	Sage and willow.	W.	G.
Cañon branch of Black's Fork, grass in vicinity.	7½	149	W.	W.	G.
Fort Bridger.....	6	155	W.	W.	G.

APPENDIX C.

Itinerary of a wagon route from Camp Floyd to Short-cut Pass, in the Great Salt Lake Desert, reconnoitred by Captain J. H. Simpson, Topographical Engineers, under instructions from the headquarters of the department of Utah, in the fall of 1858.

Localities.	Intermediate distances in miles, measured by odometer.	Camp to camp.	Total from Camp Floyd.	No. of camp.	Wood.	Water.	Grass.
Camp Floyd.....	-----	-----	-----	-----	-----	-----	-----
Camp Floyd pass into Rush valley.....	2½	-----	-----	-----	W.....	-----	G.
Fork of road in Rush valley; take right hand.	2½	-----	-----	-----	-----	-----	-----
Meadow creek.....	11½	17	17	1	Sage....	W.	G.
Johnston's settlement on Clover creek.....	8½	-----	-----	-----	-----	-----	-----
Cross Clover creek.....	1	-----	-----	-----	-----	-----	-----
Spring, head of Clover creek; abundance of wood, water, and grass.	3	12½	29½	2	W.....	W.	G.
Summit of Reynold's pass into Skull valley..	1½	-----	-----	-----	-----	-----	-----
Dry branch; water here only occasionally, and therefore not to be depended upon.	3	-----	-----	-----	-----	W.	G.
West end of pass; get into skull valley; springs on bench of mountain, two miles south.	1	-----	-----	-----	W.....	-----	G.
Willow springs; grass here abundant, but not very good; water tolerable; soil alkaline.	5½	11½	41	3	Willow and sage.	W.	G.
Pass over some sandy ridges, and camp on desert; little grass; should proceed to Pleasant Spring.	13½	13½	54½	4	-----	-----	-----
Pleasant Spring, (by direct route, four miles, as we travelled it; good water, abundance of grass, and cedar on the mountain side.	7	7	61½	5	W.....	W.	G.
Short-cut Pass; little grass; no water.....	19½	19½	81	6	W.....	-----	G.

APPENDIX C—Continued.

Return and best route from Short-cut Pass to Camp Floyd.

Localities.	Intermediate distances in miles, measured by odometers.	Camp to camp.	Total from Short-cut Pass.	No. of camp.	Wood.	Water.	
		<i>Mls.</i>	<i>Mls.</i>				
Short-cut Pass.....	20	20	20	7	W.....	W.....	G.
Pleasant Spring.....	12	12	32	8	W.....	.....	G.
West end of General Johnston's Pass, from Skull into Bush valley; no water	5	.....	.....	.....	W.....	.....	G.
Summit of pass.....	1½	.....	.....	.....	W.....	.....	G.
East end of pass.....	6½	12½	44½	9	Sage.....	W.....	G.
Meadow creek.....	19½	19½	64½	.....	.....	.....	.....
Camp Floyd.....	.....	.....	.....	.....	.....	.....	.....

APPENDIX D.

TABLE OF TEMPERATURES AND WEATHER.

1.—*Captain Simpson's trip from Fort Bridger to Camp Floyd.
September 4 to 12, 1858.*

Left Fort Bridger, September 4. During the day strong breeze from W.S.W.

CAMP ON MUDDY CREEK.

September 4.—6 p. m., 61° W.S.W., light air, sky cloudless, horizon hazy; 7½ p. m., 37° E., very light air, sky clear, horizon hazy; 9 p. m. 36½° S.E., very light air, sky clear.

September 5.—5½ a. m., 34½°, calm, sky nine-tenths covered with light clouds.

It began to rain at 7 a. m.; heavy showers from 12 to 2½ p. m.

All day strong breeze from SW.

CAMP ON THE FORKS OF SULPHUR CREEK.

September 5.—3 p. m., 56° W., light breeze, sky clear, no rain 6 p. m., 49° W., light breeze, sky covered; showers of rain since 4.

September 6.—5½ a. m., 34° W., light air, sky covered. During the night, rain; the wind then changed to N.E., and it began to snow. In the morning the snow covered the ground 1" deep. During the morning several short showers of rain or snow.

CAMP ON BEAR RIVER.

September 6.—1½ p. m., 38½° N.NE., light air, sky covered, rain and snow; 3 p. m., 34° N., light air; snowing freely from 2 to 4; 6 p. m., 35° SW., light air, sky covered; 8 p. m., 38° S.SE., light air, sky covered thinly.

September 7.—6 a. m., 25° SE., light air, sky clear, some cumulus strat. in W.

CAMP ON WHITE CLAY CREEK.

September 7.—3 p. m., 46½° S., light air, sky half covered with cumulus; a shower of snow and rain just passed; 6 p. m., 39° N.NW., light breeze, sky six-tenths cumuli and cumulo-nimbus; 8 p. m., 36½° N.NW., light air, sky clear.

September 8.—6 a. m., 24° N.NE., very light air, sky clear.

A fine, clear, calm day, at 3 p. m. on the divide, 55½°.

CAMP ON EAST FORK OF WEBER RIVER.

September 8.—6 p. m., 39½°, calm, clear sky; 9 p. m., 27½° E., very light air, sky clear.

September 9.—6 a. m., 21½°, calm and clear, a little white frost; at 3½ p. m., 65° W., strong breeze, sky clear; on the divide, Parley's Park road.

CAMP ON KAMAS PRAIRIE.

September 9.—9½ p. m., 34°, calm, clear sky.

September 10.—5½ a. m., 22½°, calm and clear, a little white frost; 7 a. m., 35½° calm, sky three-tenths cirro-stratus.

On the divide to Timpanogos river.—10½ a. m. 66° SW., light breeze, sky clear.

CAMP ON ROUND PRAIRIE.

September 10.—3½ p. m., 73°, calm and clear, some cirro-stratus on horizon; 9 p. m., 41°, calm and clear.

2.—*Capt. Simpson's exploration from Camp Floyd to Pass Short-cut, October 19 to 20, 1858.*

CAMP ON MEADOW CREEK.

October 19.—4½ p. m., 44½° N., light breeze, sky four-tenths cirro-stratus; 6½ p. m., 25½°, calm and clear; 8½ p. m., 19½° S., light air, clear.

October 20.—6½ a. m., 13° S., very light air, a few cumuli.

CAMP ON THE HEAD OF CLOVER CREEK.

October 20.—2 p. m., 56½°, calm and clear; 4 p. m., 51°, calm, sky four-fifths cum. strat. and cirro-stratus; 6 p. m., 39½° NW., very light air, a few light clouds; 9 p. m., 31½°, unchanged.

October 21.—6½ a. m., 30½°, calm and clear.

CAMP IN SKULL VALLEY.

October 21.—3 p. m., 60° S., light breeze, sky nine-tenths lightly covered; 6 p. m., 46° S., light air, sky covered lightly; 9 p. m., $51\frac{1}{2}^{\circ}$ S.S.E., light breeze, sky nine-tenths covered with cum.-nimbus. †

October 22.— $6\frac{1}{2}$ a. m., $47\frac{1}{2}^{\circ}$ S. breeze, occasionally heavy squall; sky dark.

FIRST CAMP IN THE DESERT.

October 22.—3 p. m., $59\frac{1}{2}^{\circ}$ S., breeze, sky eight-tenths cum. a. nimbus, in the morning rain; $6\frac{1}{2}$ p. m., 48° S., light air, sky eight-tenths cumulo-nimbus; 9 p. m., 41° S., light breeze, covered, in the evening some rain.

October 23.— $4\frac{1}{2}$ a. m., 39° , calm and covered; in the night rain.

FIRST CAMP ON PLEASANT SPRING.

October 23.—1 p. m., $49\frac{1}{2}^{\circ}$ SW., very light air, clear, a few white cum. on horizon; 3 p. m., $51\frac{1}{2}^{\circ}$ SW., very light air, clear, SW. horizon slightly covered; $6\frac{1}{2}$ p. m., $40\frac{1}{2}^{\circ}$ S.S.E., light air, sky three-tenths covered with light clouds; 9 p. m., $39\frac{1}{2}^{\circ}$, calm, sky eight-tenths white cumuli.

October 24.— $6\frac{1}{2}$ a. m., $40\frac{1}{2}^{\circ}$ NE., light air, sky covered lightly. All morning SE. breeze.

CAMP NEAR PASS SHORT-CUT.

October 24.—6 p. m., $43\frac{3}{4}^{\circ}$ N., air, sky four-tenths covered with cumulo-nimbus; 9 p. m., $39\frac{1}{2}^{\circ}$ N., air, sky dark.

October 25.— $5\frac{1}{2}$ a. m., 32° N.NW., breeze, sky covered, during the night a little rain and snow, in the morning more snow.

Considerable snow during the morning; all day strong N. wind.

SECOND CAMP ON PLEASANT SPRING.

October 25.—5 p. m., 38° N.NE., breeze, sky three-tenths cumuli; 7 p. m., 32° N.NE., light breeze, one-tenth stratus on horizon; 9 p. m., $32\frac{1}{2}^{\circ}$ N.NE., light breeze, one-tenth cum. stratus on horizon.

October 26.— $6\frac{1}{2}$ a. m., $23\frac{1}{2}^{\circ}$ N.NE., light air, clear.

CAMP SOUTH OF SKULL VALLEY.

October 26.— $3\frac{1}{2}$ p. m., 45° , very light air, clear; 6 p. m., 32° E., very light air, clear; $8\frac{1}{2}$ p. m., $31\frac{1}{2}^{\circ}$ E., light air, clear.

October 27.— $6\frac{1}{2}$ a. m., $29\frac{1}{2}^{\circ}$ E., very light air, sky slightly covered.

CAMP ON RUSH VALLEY.

October 27.— $3\frac{1}{2}$ p. m., 48° N.NE., light air, sky seven-tenths white cumuli; 6 p. m., 34° N.NE., very light air, sky covered lightly; 9 p. m., $28\frac{1}{2}^{\circ}$ W.SW., very light air, sky covered lightly.

October 28.— $6\frac{1}{2}$ a. m., $21\frac{1}{2}^{\circ}$, calm, one-tenth cumuli of horizon.

APPENDIX E.

English and Utah words.

English.	Utah.	English.	Utah.
1. Man	Tow-ahts	58. Light	Tesh-á
2. Woman	Muin-l-sóge	59. Darkness	To-poon-e-wok
3. Boy	Ipids	60. Morning	Ap-e-chuck
4. Girl	Nansich	61. Evening	Ug-up-ah
5. Infant	Te-wáts	62. Spring	Tam-lur
6. Father	Ino-ants	63. Summer	Tahts
7. Mother	Ree-ads	64. Autumn	Yeo-wun
8. Wife	Pe-wah	65. Winter	Tome
9. Husband	Ko-nlung	66. Wind	Nurr
10. Brother, (older) ..	Páh-vich	67. Thunder	Oo-róo-rump
11. Brother, (younger)	Such-Kige	68. Lightning	Punk-o-in-te
12. Sister, (older) ..	Pat-ich	69. Rain	Páh-ore
13. Sister, (younger)	Nani-ich	70. Snow	Ne-wáhp
14. Nation—people ..	Moonch	71. Hall	Tesh-oo-pekí
15. Head	Tote-séeb	72. Fire	Kóo-ne
16. Hair	Tso-péeb	73. Water	Pah
17. Face	Ko-bahb	74. Ice	Ten-gé-pah
18. Forehead	Mo-túk-ibe	75. Earth—land ..	Te-wéep
19. Ear	Nan-kúb-ah	76. Sea	Tw-ége-hoó-oh-pat ..
20. Eye	Poo-cep	77. River	Hov-oh-no-quint ..
21. Nose	Moop	78. Lake	Páh-ohr
22. Mouth	Luni-bup	79. Valley	Ú-ab
23. Tongue	Ow-goómp	80. Mountain	Kibe
24. Teeth	Too-ump	81. Cañon	Wé-wuds
25. Beard	Munt sóomp	82. Stone	Tunp
26. Neck	Ko-rép	83. Salt	Oh-ah-bah
27. Arm	Pur-ów-a ga-wobi ..	84. Iron	Pan-a-Kárré
28. Hand	Mope	85. Tree	Pánt-ope
29. Fingers	Mash-l-wah	86. Wood	O-pits
30. Nails, finger	Mat-seet-sump	87. Grass	O-wéep
31. Nails, toe	Tat-seet-sump	88. Willow	Kan-ahb
32. Leg	Pun-no-up	89. Cottonwood	Shoyp
33. Foot	Namp	90. Pine	U-imp
34. Toes	Tat-sóo-ah	91. Flesh—meat ..	Ílk-ny
35. Bone	O-hópe	92. Dog	Sáre-eche
36. Heart	Peé-in	93. Buffalo	Qúets-in
37. Blood	Pap	94. Bear	Que-out
38. Town—village ..	Kau-ne-gah	95. Wolf, large	She-nob-it
39. Chief	Ne-ahb	96. Deer	Teh-a-yah
40. Warrior	Ní-óqua-fie-ah	97. Elk	Par-l-ah
41. Friend	Tík-a-bóo	98. Beaver	Pah-winch
42. House	Kann	99. Otter	Pant-sóok
43. Kettle	Pam-pó-na	100. Fly	Mo-plds
44. Bow	Abch	101. Eagle	Yuón dich
45. Arrow	Ooo	102. Rattlesnake ..	Tó-ahb
46. Axe	Que-pán-um	103. Wild geese	O-wan-unk
47. Knife	Witch	104. Feathers	Pe-ah
48. Canoe or boat ..	O-bi-shok	105. Duck	Tsig-ah
49. Shoes	Pahts	106. Crane	Tch-kore
50. Pipe	Tlonge	107. Fish	Pah-ger
51. Tobacco	Quop	108. Trout—salmon ..	At-in-pah-ger
52. Smoke	Queep	109. Mullet	Oo búg-ger
53. Sun	T'abbe	110. Chub	We-pah-ger
54. Moon	Mát-oché	111. Bird	Widg-gets
55. Star	Póó-e-chiet	112. Name	Ne-ah
56. Day	Tah-á	113. Love	Pé-mits
57. Night	To-wun	114. White	To-shárr

APPENDIX E—Continued.

English.	Utah.	English.	Utah.
115. Red	An-kárr	Which	Hin-yih
116. Black	Tó-querr	What kind	Hag-arrh
117. Blue	Show-arr	Over	Quah-ko-up
118. Yellow	Wók-err	This side	E-nunks
119. Green	A-sig-arr	The right side	In-en-to
120. Great	Hóo-ot	The left side	Man-en-to
121. Small	Me-poods	Yonder	Móv-ah
122. Strong	Nár-y-ant	Here	E-bwah
123. Old	Nan-l-pids	Away off	Mee
124. Young	Ie-poods	Close by	In-chock-i-be
125. Good	Aht	Hole	Púk-age
126. Bad	Kods-át	Whip	Wash-e-nump
127. Handsome	Iey	Lariat	Tshapp
128. Ugly	Oó-oope-na	Meeting—gathering	Shu-par-ro
129. Alive	Nó-re-ga	Rusty	Nah-ahants-pe-not
130. Dead	Ya-qua	Be still	Ah-gáhr
131. Gun	Tum-'bu-yoo	Get out of the way	Iné-to
132. Powder	Queets-ów-ah	Come from a distance	Pee-jee
133. Lead	Ooo	Rabbit	Kam-mo
134. Cape	Wun-ów-ad-jip	Hare	Tshok-um
135. Bread	Tsho-ti-kup	Finger ring	Pau-a-már-ger-nump
136. Flour	Tu-shu-kunt	Foot of mountain	Kat-ne-gub
What do you call this	An-a-né-ah-inch	Side of mountain	Pi-ah-bah
To trade	Nár-a-wop	Top of mountain	Wig-ki-bah
To hunt	Pe-sháw-gah	Sore stinking	Pe-kéep
To look	Póo-in-ka	What for	Ah-kón-de-ga
To tell	Pe-sheth-i-na	May be or probably	Um-pág-go
To talk	On-pah-ger	Cedar tree	Wahp
To ask	Mi-bwan	Piñon pure	Teh-up
To write	Po-quint-man-ik	Pine nut	To-won
To hear	Nún-ki	Fir balsam	Ohmp
To travel	Páh-nt	A spring	Tspe-kin
To go on foot	Namp-pah-nt	All	Mon-ó-nah
To go on horseback	Ko-wi-yo-tapee	Awl	We-uds
To eat	Tik-ub-ah	Mouse	Widget
To drink	E-bee-bah	Cat	Mo-pids
To lay down	Ah-bee	Chicken	Kúhm-pung
To sleep	E-pivee	Cricket	Un-sock
To get up	Quer-i-ka	Grasshopper	Ahr-au-gige
To sit down	Kar-e-wah	Brier	Man-áhb
To stand	Bounfi	To meet	Tóit-tia
To run	Pun-ker-o	To cook	Si-eh
To camp	Me-a-bitch	To preach, harangue	Om-pár-ro-ah
To move camp	Me-a-bi-que	To shoot	Ko-que
To go home	Pi-que-ban	To kill	Puk-ie
To guide	Me-ár-o-gi	To gamble	Nah-a-witch
Go	Pi-qua	To hit the mark	We-nahr
Come	Pi-ke	To miss the mark	Kar-en-qúil
Blanket	Pán-shi-mo	To win	Quoi
Want	Ash-en-ta	To whip	Wit-te-push
Sugar	Pe-á-re-kunt	To kindle a fire	Koo-ne-fi-te
Cold	Shoo-pe-ki	To rub	We-tools-pe-mok
Hot	Koo-toó-rits	To grow	Nan-fi
Creek	No-quint	To cut	Take-in
Crooked	No-ko-me	To dig	Ho-ri-eh
I (pron.) or me	Tain-mi	To put down	Rood-zee
You	Nini-weh	To hide away	Ah-gah-wód-zee
He or him	Ing	To steal	Ee-ying-ah
That	Marr	To fasten or tie	Tap-itsh

APPENDIX E—Continued.

English.	Utah.	English.	Utah.
To think or remember	Shu-mivl.	To sing	Kl-eh
To make	Man-e-klsh.	To kick	Tang-le
To give	Mog-ée.	To take	Klvee
To load a gun	Tow-óds.	To catch	Taie
To burn	Koot-sik-ee.	One	Sooze
To glean	To-in.	Three	Py-oon
To quarrel	Náh-am-bah	Five	Man-ne-gin.
To strike	Que-pl.	Seven	Nah-ry-kup.
Where	Kuk-áh-bah.	Nine	Sa-romp-chu-in.
What is the matter	Mike.	Eleven	Sooze-spla-ke.
I said	Mike-ing.	Twenty	Wam-shuin
Fight	Ni-o-que.	One hundred	Taw-um-skin
Angry	Nl-ah	To catch with lasso.	We-tsung-ga-nunk
Nothing	Nah-vash	To drive	Tó-wush-o
Another	Ko-inush	To herd or drive	Po-nee-wo-nee.
Looking glass	Nah-voo-nah	To fly	Widge-que-nung.
Crow or raven	At-tók-nuts	To understand	Pe-su-ge-wa.
Wolf, small	Yodes	All the time	To-shump
Back bone	Hó-app	A few	Nán-e-soos
Ribs	Ow-át-in-bope.	To shake hands	Moo-tale.
Money, silver	To-sharr-páu-a-kar-re.	To smoke tobacco	Quót-tik-ub-ah
Gold	Waw-pún-a-kar-re	To go slow	Shan-eeep-pah-nt
Skin or hide	Pove-ah	To trot	Pove-yah
Handkerchief	Koo-ret-a-spap	To gallop	A-poo-nah
Ramrod	Takuri-nump.	To run	Tw-éze-pem-ker-ro.
Flint	Wón-nump.	To stop	Ar-rik-iu
Dry	Tal-ash-e-quipe.	Up above	Pan-rink
Wet or mry	Pah-we-up (or) Sho-go-o-gi.	Down below	Pat-san-unk
Wagon	Oo-yem-bung-go.	Say	Ah
Canteen	O-chatts.	Enough	Oo-na-shúmp
Brass kettle	Wok-er-pam-po-na.	Just like	To-an-ower.
Middle of a thing	Tol-teo-re-roup-punt.	Together	Now-ah
Cane grass	Pah-gahmp	Two	Why-oon
Wire grass	Sve-neep.	Four	What-se-vin
Coarse grass	Owow-eh.	Six	Na-vah-oon.
Yes	Oo-wah	Eight	Wah-whats-so-en
No	Kotch	Ten	Tow-shu-in
To laugh	Kee-ung-kah.	Twelve	Wyge-spin-ko
To cry	Yog-ie.	Thirty	Tam-shuin

A few sentences in English and Utah.

English.	Utah.
God, or the older brother	Tow-áhts
Devil, or younger brother	She-nob
Friend, what do you call this?	Tik-a-boo-an-a-ne-ab-inch
I do not know	Tami-i-Kotch-pe-au-ge-wa
Where are you going?	Tum-huk-ah-ba-pi-qua
I am hunting horses	Tain-Ko-wi-yoe-pe-shaw-ger
May be I saw them yesterday.	Um-puggo-tam-Kuhw-poo-inks.
Where? Do tell me	Huk-ah-bah-oo-ish-pe-sheth-i-na
Yonder, the other side of this mountain	Mov-ah-inch-Kibe-quan-ko-up
I am very hungry.	Gam-i-tu-ége-teg-u-na-ra
I have plenty. You eat with me	Tain-hov-on-kar-ne-um-now-ah-tik-i
Very well, my friend	Tu-ége-toy-tik-a-bun
When will you come back?	Um-an-oke-pe-nun-Ko-pee-jee
May be in one month	Um-puggo-sooy-mat-och-jay

APPENDIX E—Continued.

English.	Utah.
Where will you camp to-night?.....	Un-huk-ah-bah-me-a-bick aph-to-wun.....
Here, close by the spring.	E-buah-en-chock-i-bah-tape-kin.
Where is the next water?.....	Huk-ahbah-ko-mush-pah-kar-re.
Yonder, in the middle of the valley.....	Mov-ah-toi-ter-re-wap-punt-inch-nab.
Is there another good road?	Ko-mush-att-poh-kar-re-ah.
Yes, up this cañon.	Oo-wah-inch-we-wuds-pau-unk.
I am now going.....	Tam-ap-pe-quas.
I say, give me some bread.	Oo-ash-ah-tsho-to-pup-mog-le.
I have none, it is all gone.	Kats-kar-re-mon-o-na-tu-pik-wa.
Who ate it all?.....	Aug-i-mon-oke-tek-ie.
Your father and mother.	Um-mo-aute-pe-ods-now-ah.
It is snowing now.	Ahp-newahp-pl-eks.
After, be very cold.	Penun-Ko-to-ege-shu-pe-ki.

English and Sho-sho-ne or Snake words.

English.	Sho-sho-ne.	English.	Sho-sho-ne.
1. Chief	Tah-givin-up.	Now.....	E-gee-che.
2. To trade.....	Un-re-mo.	To-morrow.....	Po-e-chick.
3. Large.....	Pé-up.	Friend.....	Hanch.
4. Small.....	Té-tich.	A very good friend.....	To-widge-about-hard.
5. A great deal.....	Shout.....	Woman.....	Mo-ro-quah.
6. Deer.....	Shok-a-re-ah.	To see.....	My-bony.
7. To make.....	Mo-hún.	To hear.....	Mo-nan-ga.
8. To hunt.....	Mah-wake.	Yes.....	Hog-gash-ah.
9. To talk.....	Tig ren.	Fire.....	Cove.
10. Good.....	Chant.	To come.....	Kim.
11. Bad.....	Kosh-nant.	By-and-bye.....	So-bush.
12. Horse.....	Pim-go.	It may be.....	No-hog-gen-ny.
13. Antelope.....	Quarets.	Lodge.....	Kann.
14. I or me.....	Nin-ny.	One.....	Sum me-teach.
15. You.....	M.	Two.....	Whet.
16. War chief.....	Nab ba-tink, Tag-win-up.	Three.....	Fight.
Bread.....	To-stick-up.	Four.....	What-so-whit.
Husband.....	Ko-mung.	Five.....	Man-ne-git.
Wife.....	Wipe.	Six.....	Nar-right.
To understand.....	Chum-won-my.	Seven.....	Tul-so-wit.
To eat.....	Tic-up-pe.	Eight.....	Wash-awib.
To sleep.....	Ep-pay.	Nine.....	Qas-neck-aho.
No.....	Kay.	Ten.....	Sem-a-nute.
To go.....	Mear-ro.	Eleven.....	Sim-its-mat-doike.
What do you call this.....	Hog-on-ny-na-ne-ah.	Twelve.....	What-mal-doike.
		Twenty.....	What-sim-wer-run.

APPENDIX E—Continued.

English.	I-at.	English.	I-at.
One.....	As-see-to.	Six.....	Ah-seen.
Two.....	A-be-ka.	Seven.....	Ah-been.
Three.....	A-mo-ko.	Eight.....	Ah-mogue.
Four.....	See-po-po.	Nine.....	Pye.
Five.....	Ar-rap-pah.	Ten.....	Har-a-py-e.

Doc.
41.

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Where will
 Here, close
 Where is t
 Yonder, is
 Is there an
 Yes, up th
 I am now
 I say, give
 I have nor
 Who ate if
 Your fathe
 It is snow
 After, be

Eng

1. Chief
2. To track
3. Large
4. Small
5. A green
6. Deer
7. To make
8. To hunt
9. To talk
10. Good
11. Bad
12. Horse
13. Antelope
14. I or me
15. You
16. War

Bread...
 Husband
 Wife...
 To understand
 To eat
 To sleep
 No...
 To go...
 What do

Es



REPORT
OF THE
SECRETARY OF THE TREASURY,

IN ANSWER TO

A resolution of the Senate relative to the cost of granite for the south wing of the treasury building.

MARCH 2, 1859.—Ordered to lie on the table.—Motion to print referred to the Committee on Printing.—Report in favor of printing submitted, considered, and agreed to.

TREASURY DEPARTMENT, *March 1, 1859.*

SIR: I have to acknowledge the receipt of Senate resolution passed February 8, 1859, directing me to "inform the Senate the amount already paid for granite for the construction of the south wing of the Treasury Department, together with an estimate of the amount that will be necessary to complete the said wing of the treasury building."

In reply to this resolution I transmit herewith the report of the engineer in charge of the work, to whom the resolution was referred, for facts and details referring to the Senate's inquiry.

Very respectfully,

HOWELL COBB,
Secretary of the Treasury.

BRECKINRIDGE,
President and President of the Senate.

TREASURY DEPARTMENT,
Office of Construction, February 28, 1859.
resolution passed February 8, 1859, directing the amount already paid for granite south wing of the Treasury Department,

Where wi
Here, clo
Where is
Yonder, i
Is there a
Yes, up t
I am now
I say, giv
I have nc
Who ate
Your fath
It is snow
After, be

En:

1. Chief
2. To tra
3. Large
4. Small
5. A gre
6. Deer -
7. To m
8. To hu
9. To tal
10. Good
11. Bad -
12. Horse
13. Antel
14. I or m
15. You -
16. War c

Bread . - - -
Husband
Wife . - - -
To und
To eat - - -
To sleep - -
No . - - -
To go - - -
What do

Er

ne . - - -
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ve . - - -

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HOWELL COBB,
Secretary of the Treasury.

Hon. J. C. BRECKINRIDGE,
Vice President and President of the Senate.

TREASURY DEPARTMENT,
Office of Construction, February 28, 1859.

In reply to Senate resolution passed February 8, 1859, directing "inform the Senate the amount already paid for granite for the construction of the south wing of the Treasury Department,

Where **wi**,
 Here, **clo**
 Where is **i**
 Yonder, **is**
 Is there **an**
 Yes, up **th**
 I am now
 I say, **give**
 I have **non**
 Who ate **it**
 Your father
 It is snowing
 After, be **vi**

English

1. Chief
2. To trade
3. Large
4. Small
5. A great d.
6. Deer
7. To make
8. To hunt
9. To talk
10. Good
11. Bad
12. Horse
13. Antelope
14. I or me
15. You
16. War chief

Bread
 Husband
 Wife
 To understand
 To eat
 To sleep
 No
 To go
 What do you call

English.

One
 Two
 Three
 Four
 Five

REPORT
OF THE
SECRETARY OF THE TREASURY,

IN ANSWER TO

resolution of the Senate relative to the cost of granite for the south wing of the treasury building.

2, 1859.—Ordered to lie on the table.—Motion to print referred to the Committee on Printing.—Report in favor of printing submitted, considered, and agreed to.

TREASURY DEPARTMENT, *March 1, 1859.*

SIR: I have to acknowledge the receipt of Senate resolution passed February 8, 1859, directing me to "inform the Senate the amount already paid for granite for the construction of the south wing of the Treasury Department, together with an estimate of the amount that will be necessary to complete the said wing of the treasury building."

In reply to this resolution I transmit herewith the report of the officer in charge of the work, to whom the resolution was referred, facts and details referring to the Senate's inquiry.

Very respectfully,

HOWELL COBB,
Secretary of the Treasury.

W. J. C. BRECKINRIDGE,
Vice President and President of the Senate.

TREASURY DEPARTMENT,
Office of Construction, February 28, 1859.

SIR: In reply to Senate resolution passed February 8, 1859, directing me to "inform the Senate the amount already paid for granite for the construction of the south wing of the Treasury Department,

together with an estimate of the amount that will be necessary to complete the said wing of the treasury building," I have the honor to report:

That the total amount paid for granite for the superstructure of the south wing of the treasury extension up to this date is four hundred and forty-nine thousand seven hundred and fourteen dollars (\$449,714.)

The estimated amount for granite required to complete this south wing is thirty-nine thousand eight hundred and sixty-four dollars (\$39,864.)

The details of some portions of the work are not yet definitely determined, and when decided may alter the aggregate of this estimate for completion.

In compliance with your instructions to report in detail upon the causes why the total amount paid so far exceeds the estimated amount placed against the names of the successful bidders, in the printed report transmitted to the Senate as a reply to its resolution of December 29, 1858, upon the same subject, I have the honor to submit the following detailed report, showing the causes of, and reasons for, the excess.

But, before enumerating these details, it is proper for me to say that the printed report alluded to was prepared, under the direction of your predecessor, in answer to a call of the House of Representatives for information of the facts and reasons why the contract was awarded to Beals & Dixon, and for all the papers connected therewith, showing the amount of each bid for the work, &c. The point involved in the inquiry was the simple one of comparative amounts of bids, and was totally irrespective of ultimate cost. The information furnished in reply was solely for the purpose of elucidating that point. Assumed quantities were, therefore, (and necessarily,) used, as well as assumed styles of finish, on which to compute an aggregate from the details of each bid. The same assumed quantities, &c., were used in computing all the bids; and thus that answer to the inquiry of the House of Representatives covered the point of its inquiry.

In drafting the letter to accompany that report for the Secretary to sign, the clerk then in my office, who was not familiar with its details erroneously called the sums in the tabulated bids "the gross amount for all the granite required in the superstructure." This error escaped the notice of both the late Secretary and myself at the time the documents were transmitted. It was *not* the gross amount, nor even intended as an approximate estimate for it.

The reasons why *actual* quantities were not used are that they were then unknown, and it was impossible to accurately ascertain them from any data then in the department's possession. This was three years ago, and actual quantities and styles are not even now determined upon for every portion of the work. All the drawings the department then had for its guidance were contained upon two sheets prepared by the present architect of the Capitol extension, and approved by Congress, being a general plan of the entrance story only and three front elevations, totally devoid of details, with but few

measurements, and the different elevations disagreeing with each other. And when it is known that competent draughtsmen have been steadily employed since that period, under the architect of the Treasury Department, in preparing and elaborating details and measurements, and that the whole is not yet completed, it will be manifest that the meagre and chaotic *data* then before the department placed it wholly out of its power to make an *accurate* estimate of details. Assumed quantities were therefore necessarily used, *pro forma*, to ascertain the relative (not the absolute) amounts of bids, and their comparative cheapness. The bid and contract determined *prices* only; quantities and style are not determined by either the bids or the contract, only the *rates* at which quantities and styles should be paid for.

The attention of Congress was called (Secretary's Report on the Finances, 1855-'56, page 570) to the meagreness of detail the department had for its guidance, and Congress notified that the department was using its discretion in deviating from the original papers, and asked to designate how far the superintendent could deviate from these drawings to harmonize their various details. The silence of Congress on the subject was construed into an approval of the department's exercise of its discretion, and the work has so been conducted.

The printed report above alluded to was transmitted in reply to Senate resolution of December 29, 1858, because its details covered all the points involved in that resolution, and its transmission would avoid the delay consequent upon making MS. copies of the voluminous documents. The delay (of eighteen days) in answering your present inquiry has been unavoidable. My assistant, with four experts, has been constantly and laboriously employed, day and night, in preparing and computing the annexed details.

The correctness of the method of computing, by assumed quantities and styles, to determine the relative amount of bids, and for the purpose covered in the original resolution from the House of Representatives, is established by these details now furnished, which prove that in computing *all* the bids by actual quantities and styles as paid for the bid of Beals & Dixon is still the lowest.

The following details are now respectfully submitted in compliance with your instructions:

The total amount paid for granite and other stone for south wing of treasury extension—say for cellar and area walls, piers, &c.—purchased in open market, and not included in schedule and synopsis of 1855—

To Beals & Dixon	-	-	-	\$9,002 68
To D. O'Neil	-	-	-	12,628 22
To Sumwalt & Green	-	-	-	3,867 22
To W. McClay	-	-	-	373 38
				<hr/>
				\$25,871 50
				<hr/>

The total amount paid for granite on the superstructure of the south wing, under the contract of Beals & Dixon, is	-	-	-	-	-	\$449,714
The estimated amount of granite required to complete the south wing, under Beals & Dixon's contract, (which may be varied by changing the plan on which the estimate is made,) less 10 per cent. retained						35,878
						<hr/> 485,592
Amount which will be due Beals & Dixon on the completion of their contract, and now retained for its faithful performance	-	-	-	-	-	53,954
						<hr/> 539,546
Total amount of Beals & Dixon's contract for south wing						
Amount appearing on the canvass of bids for granite for south wing, against the names of Beals & Dixon, in the printed report transmitted to the Senate	-					243,556
						<hr/> 295,990
Excess over printed report	-	-	-	-	-	<hr/> <hr/> 295,990
This excess is accounted for in gross as follows :						
Amount from increase of quantities						\$93,962 00
Amount from changes of plan and style of work	-	-	-	-	-	202 028 00
						<hr/> 295,990
						<hr/> <hr/> 295,990

In detail, this excess is accounted for in the following table, viz:

	Quantities for synops- is of 1855.	Quantities per B. & D's deliveries, and completion.	Increase.	Decrease.	Amount of B. & D's bid, as per synops- is of 1855.	Amount, as per synop- is of 1855, at the actual rates paid.	Amount as per actual quantities and ac- tual payments.	Increase by increase of quantities.	Decrease by decrease of quantities.
Cornice.....	710 l. f. No. 3	865 l. f. No. 1...	155 l. f.	-----	\$22,365	\$27,690	\$33,735	\$6,045	-----
Architrave.....	274 l. f. No. 3	476 l. f. No. 1...	202 l. f.	-----	10,138	12,056	20,944	8,888	-----
Architrave.....	284 l. f. No. 3	766 l. f. No. 1...	482 l. f.	-----	4,260	5,396	14,554	9,158	-----
Cape of columns.....	18.....	14.....	-----	4.....	11,700	16,200	12,600	-----	\$3,600
Cape of ante.....	49.....	50.....	1.....	-----	7,840	11,760	12,000	240	-----
Bases of ante.....	49.....	50.....	1.....	-----	3,920	3,920	4,000	80	-----
Bases of columns.....	18.....	14.....	-----	4.....	3,240	3,240	2,520	-----	720
Shafts of columns.....	18.....	14.....	-----	4.....	44,100	48,600	37,500	-----	10,800
Plain steps.....	2,835 l. f.	2,060 l. f.	-----	775 l. f.	5,670	6,670	4,120	-----	1,550
Platforms.....	1,661 a. f.	590 a. f.	-----	1,071 a. f.	2,076	2,076	737	-----	1,339
30 c. f. stock.....	24,000 c. f.	27,650 c. f.	3,650 c. f.	-----	10,560	10,560	12,166	1,606	-----
50 c. f. stock.....	4,000 c. f.	4,000, av'ge 60	-----	-----	2,360	2,680	2,680	-----	-----
100 c. f. stock.....	4,000 c. f.	2,000, av'ge 120	-----	2,000 c. f.	3,860	8,920	4,460	-----	4,460
330 c. f. stock.....	16,000 c. f.	21,765, av'ge 412	6,765 c. f.	-----	43,040	52,040	71,933	19,893	-----
613 c. f. stock.....	2,500 c. f.	2,500.....	-----	-----	12,031	12,031	12,031	-----	-----
Hammering No. 1.....	17,192 a. f.	39,795 a. f.	22,603 a. f.	-----	13,753	13,753	25,836	12,083	-----
Hammering No. 2.....	10,174 a. f.	-----	-----	10,174 a. f.	6,104	6,104	-----	-----	6,104
Hammering No. 3.....	10,791 a. f.	-----	-----	10,791 a. f.	5,179	5,179	-----	-----	5,179
Beds and builds.....	73,392 a. f.	63,392 a. f.	-----	10,000 a. f.	13,210	13,210	11,410	-----	1,800
Belustrade.....	484 l. f.	377 l. f.	-----	107 l. f.	18,150	18,150	14,119	-----	4,031
					243,556	279,235	297,645	57,993	39,583

GRANITE FOR THE TREASURY BUILDING.

TABLE.

	Beals & Dixon.	J. J. Rink.	Berry & Mohn.	Acker & Co.	Walker & Co.	Hawkes.	Sargent & Co.	M. G. Emery.	Gault & Bro.	J. B. Emery.	Rogers.	Whitcher, (agent)	McCloy.
Cornices, 865 l. ft.	\$33,795	-----	\$25,950	\$51,900	\$36,979	\$64,875	\$29,410	\$25,085	\$40,568	\$21,409	\$28,294	\$26,815	\$28,545
Architrave, 476 l. ft.	20,944	\$261,662	18,564	35,700	18,493	27,608	26,556	15,232	21,896	14,280	17,612	17,136	20,468
Architrave, 766 l. ft.	14,554	-----	8,043	26,810	13,788	19,150	19,150	7,660	12,869	6,894	8,426	9,958	15,320
Column caps, 14	12,600	15,792	8,400	6,860	4,130	14,000	16,114	6,020	13,900	5,600	11,480	14,518	11,200
Antae, 50	12,000	17,800	6,250	6,250	4,300	22,500	12,100	3,000	17,750	2,900	11,000	9,000	8,500
Antae bases, 50	4,000	9,250	2,500	4,000	2,800	10,000	7,250	800	6,350	750	3,200	7,500	4,900
Column bases, 14	2,520	7,728	2,520	1,960	1,838	4,900	4,494	1,820	3,610	1,470	2,800	4,550	4,130
Column shafts, 14	37,800	144,760	50,400	25,200	18,158	49,000	63,518	25,000	51,408	16,800	35,644	33,600	3,500
Steps, 2,060 l. ft.	4,120	5,892	3,605	2,060	2,554	4,120	4,120	3,090	3,214	3,090	3,708	5,088	3,605
Platforms, 590 s. ft.	737	850	690	590	785	885	885	516	814	501	590	1,032	1,033
30 c. ft. stock, 27,650 ..	12,166	19,355	14,654	13,825	13,548	13,825	17,972	13,825	16,590	13,272	16,590	13,000	12,443
60 c. ft. stock, 4,000 ..	2,680	4,900	3,320	3,200	3,460	2,400	3,800	5,000	4,200	4,320	3,300	3,000	3,000
130 -----, 2,000	4,460	118,400	5,720	4,800	6,460	3,000	6,200	23,600	9,600	19,920	5,100	5,000	9,000
412 -----, 21,765	71,933	5,419,845	94,678	94,025	156,164	16,324	97,290	309,736	179,344	426,159	75,416	92,000	176,078
613 -----, 2,500	12,031	9,379	16,900	16,825	19,424	1,875	16,200	88,700	30,650	74,075	12,425	13,000	30,275
No. 1 hem'g, 39,795	31,836	35,815	31,836	16,714	33,000	39,795	69,611	27,856	71,631	25,867	35,815	79,530	35,816
Beds, 63,592	11,410	17,117	15,849	15,215	13,947	15,849	12,679	13,947	13,947	15,849	17,751	17,117	19,019
Balustrade, 377	14,119	14,000	12,906	13,055	14,000	18,650	15,293	14,920	13,053	13,055	13,196	12,309	14,000
Curved work	303,645	6,147,845	321,685	337,984	368,879	323,756	422,772	785,807	510,826	666,211	302,347	364,213	332,831
	30,000	80,000	No bid.	No bid.	31,500	50,000	No bid.	No bid.	16,750	No bid.	37,500	37,500	No bid.
	333,645	6,227,845	321,685	337,984	395,379	378,756	422,722	785,807	520,576	666,211	339,847	401,713	332,831

These variations in the quantity of material are accounted for as follows:

Cornice.—There having been no change in the plan of the building as authorized by Congress, the reason of the excess of this item above the synopsis is owing to an error in the computation of measurement in the synopsis of 1855.

Architraves over columns and antæ.—The increase in length in these items is owing to the fact that no plans for the three portico ceilings existed at the time the schedule of 1855 was made, it not having been determined whether they were to be of iron or granite, and an error in estimate of length of some 400 feet.

Columns, bases, and capitals of columns.—The number of columns, with their caps and bases, was reduced by the change of plan in the south portico, authorized by the Secretary.

Plain steps and platforms.—These are reduced by a proposed change of plan for steps, on which the estimate of amount required to complete the south wing is based.

Rough stock not exceeding thirty cubic feet.—This item does not contain the stock used in the interior of the building, such as steps, well hole, plates in stairways, and inside architraves, which were not included in the quantities furnished by the synopsis of 1855, but the increase is caused by using backers, fillers, and bands in basement, and larger stones in the upper stories.

Rough stock in stones averaging three hundred and thirty cubic feet.—The large increase in this item was caused by increasing the thickness of antæ from 2 feet 6 inches to 2 feet 10 inches, by introducing the scotia and moulding on the shaft, and by twelve corner antæ, which are much larger than those on which the synopsis of 1856 was made.

Hammering No. 1.—This item now contains the quantities furnished by the synopsis of 1855, under the head of hammering No. 1, No. 2, and No. 3. The quantities of hammering in that synopsis were calculated from the small plan furnished by Mr. Walter, the architect, drawn on a scale of thirty feet to one inch.

Beds.—The decrease in this item is owing to the decrease of *beds and builds*, caused by substituting single stones in place of ashlar around the doors and windows, as supposed in making the synopsis of 1855.

Balustrade.—The length of balustrade as given in the synopsis of 1855 included the blocking courses on the rear front, which had no need of a balustrade.

N. B.—It will be seen from the foregoing statements that if the schedule or synopsis of bids for granite had been made from the actual quantities instead of the estimated or relative quantity, the result would not have been altered in making Beals & Dixon the lowest bidders.

Alterations and changes of plans.

1st. In style of cutting :

Cornice, architraves, capitals of antæ, capitals of columns, estimated in schedule of 1855 as hammering No. 3 ; shafts of columns estimated as No. 2.

These items have all been out with hammering No. 1, and the capitals of antæ enlarged and ordered with elaborately carved necks.

These changes have caused an increase of cost, as follows :

Change of hammering from 2 and 3 to No. 1.....	\$2,259 00	
Change of capitals of antæ.....	25,449 00	
Change of bases of antæ.....	2,138 00	
Increase on large sized saddle stones, from levelled course on raking pediment cornice, from carved dentals, carved quoins of middle course with extra sinkages, to admit top quoins, and from peculiar cutting of 380 lineal feet of top course.....	7,169 00	
Total cost of change.....	37,015 00	
Deficiency or error in estimate.....	24,411 00	
Original estimates as follows :		
Cornice and architraves.....	\$36,763 00	
Column caps and bases.....	70,800 00	
	<hr/>	107,563 00
		168,989 00
Less architraves and caps, short.....		6,000 00
		<hr/>
		162,989 00

2. Alteration in size of stone :

Antæ.—The 49 antæ estimated in the schedule of 1855 were in three stones, but a plan was submitted to your predecessor, in October 1856, proposing to make the shafts of antæ in one piece, with scotia moulding, with a statement of cost, and by him approved.

The antæ were estimated in the synopsis of 1855 as follows :

16,000 cubic feet of 330 feet average.....	\$43 04
9,400 cubic feet of hammering 1, 2, 3.....	5,610
	<hr/>
Total cost as originally estimated	48,654

The change authorized by your predecessor from three to one stone, increased depth of stone, finer cutting, &c., cost as follows :

21,765 cubic feet of 412 cubic feet stone average, being increase of 3,650 cubic feet, at increased price.....	\$28,893
Change of hammering 9,400 feet superficial from 1, 2, 3, to No. 1.....	1,910
Work on scotia moulding, &c	42,342

Total cost of change..... 73,145

Error in original estimate, in not estimating rightly, or amount necessarily involved in this work, viz : for hammering 9,400 superficial feet, 5,722 feet beds.....

8,550 81,695

Total cost of antæ

130,345

Base and belt course of basement story, window and door sills, posts, lintels, moulded blocking courses, forming the panels between the antæ in the first, second, and third stories, and sunk work and rebates in rear front:

In the plans submitted by the architect, Mr. Walter, all these stones are represented as plain ashlar, and were estimated accordingly in the synopsis of 1855, and as being hammered No. 1 in basement and entrance stories, No. 2 in second story, and No. 3 in third story. These alterations were submitted to your predecessor in 1855 and 1856, and by him approved when the substitution of highly finished moulded stone for plain ashlar was adopted.

The whole exterior front of the building was originally estimated as follows:

17,192 superficial feet, No. 1	\$13,753 00	
10,174 superficial feet, No. 2	6,104 00	
10,791 superficial feet, No. 3	5,179 00	
	<hr/>	\$25,036 00
Of this in face work of antæ		5,610 00
		<hr/>
Total amount of extension work in basement and between amount hammered.....		19,426 00
Beds as in table.....		13,210 00
24,000 cubic feet of 30 feet stock.....		10,560 00
8,000 cubic feet of 50 and 100 feet stock.....		6,220 00
		<hr/>
Total cost as originally estimated.....		49,416 00
Increase by base and belt courses of basement by washers, levelled work, rebates, sink- ages, in same story.....		
	\$10,160 00	
Increase by rebates, window-sills and lintels on rear.....		
	3,032 00	
Increase by moulded work in entrance, second, and third stories.....		
	65,675 00	
Panels between antæ		
	3,061 00	
Increased hammering.....		
	7,416 00	
	<hr/>	
	89,344 00	
Beds		
	1,800 00	
	<hr/>	
		87,544 00
		<hr/>
Total cost.....		136,960 00
		<hr/>

Additions, columns, capitals, and architraves in basement, stairway plates and steps in interior, balcony plates and ceiling plates in east wing portico:

The whole of these items in 14 large columns and caps with architraves, and all stones of very large dimensions were not included in the synopsis of 1855. There was no plan of the basement at the time the synopsis was prepared.

Inside architraves, sills, columns, and caps.....	\$30,893
Well-hole plates and stairways.....	36,907
Balcony and ceiling plates for east and west portico.....	5,823
Arch stones and facing inside of buttresses.....	1,927
	<hr/>
	75,551

Change in vestibule of south portico.

This change of plan, with its estimate of cost, was submitted to in December, 1858, and approved.

This change dispensed with four columns, with their caps and base and the architraves and ceiling over the same—decrease in cost there \$15,230.

In addition, there is dispensed with, by reason of this change, \$3,500 worth of architrave, which may be used in other wings.

These stones, with others amounting to \$2,102, have been ordered and paid for on account of south wing, and appear in the tables, and will be transferred to other wings, amounting to \$6,000.

RECAPITULATION.

From increase of quantities in the table...	\$24,410 00	
From increase of quantities not in the table	75,552 00	
	<hr/>	
	99,962 00	
Less architraves and other stones that may be used in the other wings.....	6,000 00	
	<hr/>	\$93,962
Change of plan and style as follows :		
1st change.....	37,015 00	
2d change.....	73,145 00	
3d change.....	87,544 00	
Deficiency in quantity estimated.....	24,411 00	
Deficiency in quantity estimated.....	8,550 00	
Caps to lengthen columns.....	1,310 00	
	<hr/>	
	231,975 00	
Less by increase quantities in table.....	\$24,410 00	
Less by steps, platform, and balustrade.....	5,537 00	
	<hr/>	
	29,947 00	
	<hr/>	202,028
		<hr/>
		295,996

Amount of original estimate, as follows:

Cornice and architraves.....	\$36,763 00	
Columns, with caps and bases, and caps and bases of antæ.....	70,800 00	\$107,563 00
Antæ in three stones.....		48,650 00
Work on basement, and between antæ.....		49,416 00
Steps and platforms.....		7,746 00
Cost of buttresses.....	12,031 00	
Balustrade	18,150 00	
		30,181 00
Estimated amount of granite for south wing, by relative quantities.....		243,556 00

Changes, alterations, and additions, as follows:

Cornice, architraves, and columns, with caps and bases, and caps and bases of antæ—cost of change	\$37,015 00	
Deficiency in estimated quantities.....	24,411 00	
	61,426 00	
Less architraves.....	6,000 00	\$55,426 00
Antæ—cost of change.....	73,145 00	
Deficient quantities.....	8,550 00	
		81,695 00
Face-work of basement, and between antæ— cost of change.....		87,544 00
Interior and other work, in addition to estimate—cost		75,552 00
Caps to lengthen columns.....		1,310 00
		301,527 00
Less by decreased amount of steps, plat- forms, and balustrade.....		5,537 00
		295,990 00

All which is respectfully submitted.

I have the honor to be, very respectfully, your obedient servant,
A. H. BOWMAN,

Eng. in charge Treasury Department.

Hon. HOWELL COBB,
Secretary of the Treasury.

MESSAGE

OF

THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING,

In compliance with a resolution of the Senate, a copy of the opinion of Judge Brewer in the Great Falls land condemnation case.

MARCH 2, 1859.—Read and ordered to lie on the table. Motion to print referred to the Committee on Printing.

MARCH 3, 1859.—Report in favor of printing the usual number, and 500 additional copies for the use of the War Department submitted, considered and agreed to.

To the Senate of the United States:

I transmit herewith a report from the Secretary of War, with accompanying paper, in obedience to the resolution of the Senate adopted 23d February, requesting the President of the United States "to communicate to the Senate a copy of the opinion of Judge Brewer in the Great Falls land condemnation case, involving a claim for damages to be paid by the United States."

JAMES BUCHANAN,

WASHINGTON CITY, March 1, 1859.

WAR DEPARTMENT, February 28, 1859.

SIR: In reply to the resolution of the Senate of the 23d instant, referred by you to this department, I have the honor to transmit herewith "a copy of the opinion of Judge Brewer in the Great Falls land condemnation case, involving a claim for damages to be paid by the United States."

The reason why this answer was not more promptly given is that the opinion of Judge Brewer was not in the War Department at the date of the Senate's resolution.

Very respectfully, your obedient servant,

JOHN B. FLOYD,
Secretary of War.

The PRESIDENT.

CIRCUIT COURT FOR MONTGOMERY COUNTY.

THE UNITED STATES vs. THE GREAT FALLS MANUFACTURING COMPANY

The State of Maryland, by the act of its legislature of 1855, 179, after reciting the appropriation by Congress for the purpose of supplying the city of Washington with water, provided by its section "that if the plan adopted by the President of the United States for supplying the city of Washington with water should require water to be drawn from any source within the limits of this State, consent is hereby given to the United States to purchase such lands and to construct such dams, reservoirs, buildings, and other works, and to exercise, concurrently with the State of Maryland, such jurisdiction over the same as may be necessary for the said purpose."

The 3d section provides that in the condemnation and assessment of such lands and materials as may be necessary for such purposes, such proceedings, in all respects, shall be had as by existing laws required for the condemnation and assessment of lands and materials for the use and construction of the Chesapeake and Ohio canal and the works appurtenant thereto. The State of Virginia, by its act of March 3, 1854, authorized the purchase of land (not more than ten acres) for the purpose of the abutment of a dam across the Potomac and the acquisition of materials for its construction, with a proviso to protect private rights. The Potomac river having been selected as the source from which the said water should be drawn, the place for that purpose was located across the bed of the Potomac river and across an island in said river at or about the Great Falls of the river named "Conn's or Bishop's island," to abut at its further end on a tract of land purchased on the Virginia shore, in pursuance of the aforesaid act of its legislature. This portion of the river, as well as Conn's island, lying in Montgomery county, and the said island claimed in part or in whole by the Great Falls Manufacturing Company, incorporated by the act of the legislature of Virginia of 1848, a warrant was issued for the condemnation of so much of the site of said dam as was the property of said company, and the inquisition returned to the circuit court for Montgomery county, assessing "all damages which the said company have sustained, do sustain or will sustain by erecting said dam for said aqueduct through said island of land at one hundred and fifty thousand dollars." At the next term last of said court a motion was made by the United States to set aside the said inquisition for the reasons filed. A great deal of money was taken, and the case fully argued in behalf of the United States and the company, and during the progress of the argument near its conclusion, a petition was filed by Amos Davis and others, alleging that they had large vested and equitable interests in the property and franchises, which would be most injuriously affected by the affirmation of the said inquisition, and praying that it should be set aside; and as a ground of their right, personally and individually, to object to said affirmation, they allege "that they, on the 2d of October, 1858, purchased of Hall Neilson, president of the Great Falls

facturing Company, 2,500 shares of the stock of the company, being a quarter of the whole, and are now the absolute owners thereof; and on the 24th of July, 1858, for a valuable consideration, obtained from the said Hall Neilson, as president of said company, in its name and under its corporate seal, an agreement to sell to them the remaining three-quarters of said stock for a sum specified in the agreement, provided the offer should be accepted on or before the 1st of December, 1858. The amount of the sum paid for the first purchase, or proposed to be paid for the subsequent purchase, if completed, was not stated, but the day limited for the acceptance of the offer having passed without their acceptance, they still claim some equitable interest in the whole, which, if allowed, would divest the Great Falls Company of all interest in the matter in dispute, and constitute them the company. The fact of the purchase merely was admitted by Hall Neilson, as president of the company, and the petitioners claimed to participate in the contest. The proceeding was a singular one, *calculated*, if not *intended*, to embarrass the decision of the case; but the court, thinking they had no right to interfere, refused to notice their application further than to permit their counsel to file notes in support of their pretensions, to which all parties gave their assent. Their principal objection is the unconstitutionality of the act of 1853, which the court, having already decided to be constitutional in another case, and given its opinion on full argument, refused to consider. This point was not made by the United States or the company, as it would not have answered the purpose of either.

It is not necessary to examine in detail all the reasons filed for setting aside the inquisition.

The company claimed damages not only for the deprivation of that part of Conn's Island occupied by the dam and probable injury from the overflow of another portion, both of which would be inconsiderable, but also claim damages for the violation of certain riparian rights which they conceive themselves entitled to in consequence of the ownership of Conn's Island and a tract of land directly opposite on the Virginia shore called Toulson's Tract, and it is apparent from the testimony and inquisition that nearly the whole of the damages were given for the violation of that supposed right. It becomes important therefore, to ascertain in the first place the existence, legal efficacy, and extent of these rights. The company owns Conn's Island under a grant from the State of Maryland, and it owns the "Toulson Tract" under a grant from Lord Fairfax or the State of Virginia, as included within the limits of that State, or a purchase from the heirs of Fairfax. This tract begins for its northwestern or upper boundary, adjoining the lower end of seven acres purchased by the United States from Mr. Green, for the abutment of the dam, and adjoining the proposed abutment and runs some distance below Conn's Island. The United States claim by purchase an island near the northern side of the Maryland shore, and a tract on the said shore extending above and below Conn's Island and the "Toulson Tract." The greater part of the water of the river runs between "Conn's Island" and the "Toulson Tract," about one-eighteenth only running in the natural state of the river between Conn's Island and the Mary

land shore. The canal of the old Potomac Company was located on the Toulson tract, commencing at a dam thrown by them from the said tract to Conn's Island, a short distance only below the site of the present dam. The Chesapeake and Ohio Canal Company, to whom the rights of the old Potomac Company were transferred, have abandoned this dam, and that and the canal are in a state of dilapidation, so that the whole property in the canal and works, except the dam, reverts it is presumed to the owner of the land. Upon the Toulson tract there are many mill sites which may be made available if the owner has a right to divert the water from the river for their use. There is no proof, nor is it pretended that any exist in Conn's Island; Whence then do the owners of the Toulson tract derive their riparian rights? There can be no possible doubt that the lines of the charter of Maryland included the whole of the Potomac river. The crown of England was the proprietor of all the land surrounding the State of Maryland, as well as of the State itself, and after prescribing its limits on every other side it starts for the last western line, "from the true meridian of the first fountain of the river of Pattowmack," "thence verging towards the south unto the further bank of said river, and following the same on the west and south unto a certain place called Cinquack near the mouth of the said river." This was intended to be the dividing line between the future State of Maryland and that part of the State of Virginia which was afterwards granted to Lord Fairfax. The grantor seems to stand and speak in the State of Maryland, for the west line is bounded by the further bank. Suppose the grant had been to the *nearest side* of the river and thence to its mouth. The river would have been the boundary between the new State and the land of the grantor on the western side of the river, and the State would have owned the river "*ad medium filum aque*," but extending to the further bank it must be construed to pass more than if it had been limited to the nearer bank, and if the line should be construed to run *with the river*, and not with the bank, the river would still be the boundary; but the grantee would hold the whole bed of the river to low-water mark on the further side.—(Handly's *Leasee vs. Anthony*, 3 Wheaton, page 374.) But the line as contended for by the counsel for the United States certainly extends further than low-water mark. It must be construed by its expressions, and they seem to be substantially, though not identically the same as those used by the State of Georgia in its grant referred to in *Howard vs. Ingersoll*, 13 Howard, page 381. The expressions in that grant are "west of a line beginning on the *western bank* of the Chattahoochee river, where the same crosses the boundary line between the United States and Spain, running thence *up the river* Chattahoochee and *along the western bank* thereof." This grant is construed without reference to the fact that Georgia was the original proprietor of the river.—(Idem, page 316.) The court say "in our view the words of the cession have the same meaning in law that they have in common parlance. They are not at all uncertain if taken connectively as to the locality intended for the western line of Georgia on the Chattahoochee. Separate the word 'bank' from 'on and along the bank,' and consider it only in connection with the words 'running up the

river,' and it might be inferred that the water of the river at some stage of it was to be the boundary, and that those owning the land on either side were 'riparian proprietors' *usque ad medium filum aquæ*, 'but not so when they are considered together as we will presently show.'" The words of the Maryland charter are "to the bank, &c." Where the line strikes the bank is the beginning of the next line, and it must begin "on the bank," as the line preceding runs to the bank and no further. In both grants the beginning of the dividing line is therefore "*on the bank*," and so far they are identical, but in the Maryland charter there is the *absence* of the expression "running up" or down the river. The words are "following the *same* on the west and south unto a certain place called Cinquack, situate *near the mouth* of the said river." It was contended for the company that "bank" and "river" were synonymous, and that following the same meant the river, on which the preceding line terminated. But it is evident that the grant makes a distinction between them. If the word "*same*" in the translation could in English grammatical construction refer to the river, and not to the bank, the line might possibly run with the river; but a very ingenious criticism suggested by the counsel for the United States, on the concordance of the words of the charter, originally written in Latin, shows that the line was to follow *the bank* and not *the river*. The first line from the head-waters of the river runs "*ad ulteriorem dicti fluminis riparii et eam sequendo*," to wit: "*riparii*" with which *eam* agrees in gender and not "*flumen*" with which it could not agree; "*eam*" is feminine, "*flumen*" neuter—(See Dictionary; also rule in Ross's grammar.)

"Nouns in C. A. L. E. T. ar, men, ur, us,
May to the neuter kind be placed by us."

The termination of the line, "*qua plaga occidentalis ad meridionalem spectat*," is near the mouth of the river. But, independent of this mode of construction, the "river" and "*the bank of the river*" are not synonymous. The court say further, "when the commissioners used the words bank and river they did so in the popular sense of both. When banks of rivers were spoken of, those boundaries were meant which contain their waters at their highest flow." Again, "they knew that rivers have banks, shores, water, and a bed;" and again, the words "*along the bank*," added to the words "*on the bank*," distinguish this case from all those in which courts have had the greatest difficulty, where a line is to be fixed when it is on the bank, *without a call for the stream*, or along the river or "up or down the river."—(Angell, 19.) Along the bank is strong and definite enough to include the idea *that any part of the river or its bed was not to be within the State of Georgia*. I therefore think it clear that Maryland included within its chartered limits not only the bed of the Potomac river to low-water mark on the further side, but to the bank beyond, excluding the possession of any riparian rights of the State of Virginia. It is true that Virginia contested the right of the proprietary of Maryland to any part of its chartered limits, but Maryland sustained her rights, (the case in 13 Howard, 400, is conclusive on this point,) became a populous State, governed by laws of her own enacting, and at the period of the revolution fighting side by side

with Virginia, in conjunction with the other provinces, for the support of their mutual liberties, the independence of all was declared, and Virginia, governed perhaps by feelings originating in this intimate connection, by her constitution of 1776 recognized the right of Maryland to all the territory contained within its charter, with all the rights of property, jurisdiction, and government, and all other rights whatsoever to the same, which might at any time theretofore have been claimed by Virginia, excepting only the free navigation and use of the rivers Potomac and Pomoke, with the property of the Virginia shores or strands bordering on either of said rivers, and all the improvements which have been or shall be made thereon. Maryland, however, did not rely for her rights in the premises on this recognition. She had possession under her charter, including the Potomac river; had granted all the islands in it, relying on the justice and legality of her claim under the charter.—(See 13 Howard, 400.) Nor was she satisfied with this exception, as appears by the resolution of the legislature of 1777 re-asserting her exclusive right over the territory, bays, rivers, and waters, included in the charter. Virginia, however, claiming an exclusive right to the navigation of the bay at its mouth, and of the mouth of the Pomoke, at the session of 1777 Maryland appointed commissioners for the purpose of adjusting, with commissioners appointed by the State of Virginia, the navigation of and jurisdiction over that part of the Chesapeake bay which lies within the limits of Virginia, and over the rivers Potomac and Pomoke, subject to the ratification of the assembly. A compact was entered into on the 28th March, 1785, and ratified by the legislature of both States at their next session. It is said by Chancellor Bland, in his opinion in Binney's case, (2 Bland Ch. Rep., 126,) that "the general scope and object of that compact was not to fix and give a legal character to any natural subject whatever; in that respect it did not profess to *alter* or to *stipulate* for anything; throughout it speaks of waters which are by nature navigable, and regulates the terms and manner in which the natural navigation is to be conducted by the citizens of the contracting parties." He refers to the instructions to the commissioners of Maryland, in the votes and proceedings of the House of Delegates of 1777, and a resolution of 1784, to which access cannot be had at this time. Again, he says, (page 127,) "that it leaves the territorial rights of the parties untouched;" and also, (page 126,) "that there is nothing in this compact which relates in any manner whatever to the river Potomac above tide." This, it is contended, is a mere "*obiter dictum*." As such, however, it is entitled to great respect from all the courts of Maryland. Chancellor Bland was a man of great erudition and considerable legal ability, and the question appears to have been fully investigated and considered by him, and I think any inferior tribunal would be fully justified in adopting his opinion; nevertheless it was not necessary to the decision of the case before him, and therefore I thought it clearly wrong. I should not consider this court to be bound by it, but on a full examination I concur with his views. It was said in argument for the company that "the dispute between Virginia and Maryland, as to territories and boundaries, extended from the mouth to the source of the river Poto-

mac." That is true, but Maryland claimed and was in possession of the whole bed of the Potomac above tide, and also claimed a large portion of territory on the head waters of the Potomac river, a portion of which had been granted by her to her citizens, and her right to which has been asserted to this day, but which was also claimed by Virginia, and was then and now is possessed by her. No stipulation is contained in the compact in regard to the territory, nor is any reference made in it to the unnavigable part of the river above tide, as distinguished from the navigable part. It could not therefore be fairly inferred from the extent of this dispute that the compact extended to the unnavigable part of the river. The navigation of the whole river, above and below tide, was of some consequence to Virginia, but much more so below than above. There were no fisheries of any consequence above tide; no necessity for any provisions with regard to piracy, or crimes on the river, the whole being in the body of the respective counties of Maryland; and the imperfect navigation of the upper part, to be improved by slack water and canal navigation, had, two months before the conclusion of the compact, been thrown open to Virginia, and to all the world, by the act of 1784, ch. 33, sec. 10, and a power conceded to Virginia, with the concurrence of Maryland, to make such regulations by law as might be necessary to prevent the importation of prohibited goods, or fraud in evading the payment of duties on goods imported into the State. The 19th section of this act authorizes the transportation of the goods of the citizens of each State across the river free of duties; and thus, it seems to me, all claims which Virginia did or could set up to any use of the river above tide were disposed of. That the bed of the river to the further bank was included in the lines of the charter was admitted by Virginia by the clause in her constitution of 1776, before referred to, by the exception of the Virginia shores or strands bordering on the river. The compact of 1785 recites its object to be to settle the *jurisdiction and navigation* of the Potomac river, &c., &c. The only provision in the compact which has any reference to riparian rights of any description, or which could be construed as applying to the river above tide, is the ninth section. Virginia in her constitution of 1776, excepts from her recognition of the claims of Maryland the free navigation and use of the Potomac river. There are no *such general expressions* in the compact, but it provides fully and definitely for the free navigation of the river, and all the uses which could be made of it in its *natural bed* below tide, to wit: its fisheries—no such use could be made of it above tide—or *any other use in its natural bed*; but Virginia also excepted "the property on the Virginia shores or strands bordering on either of said rivers, and all improvements which have been or shall be made thereon." What did she mean by this exception? These words "shores" and "strands" are used as synonymous, and would seem to be so. Webster defines "strand" to mean "the shore or beach of the sea or ocean," and perhaps of a navigable river; it is never *used* of the bank of a small river or pond. He also defines "shore" as "the coast or land adjacent to the sea or ocean, or to a *large* lake or river." We do not apply the word to the land contiguous to a small stream, we call "a bank." I refer to the consti-

tution of Virginia merely to show her object in making the compact. The compact does not pursue exactly the language of the exception. It gives to the citizens of Virginia "full property in the shores of Potomac river *adjoining* their land, with all *emoluments* and *advantages* thereunto belonging, and the privilege of making and carrying out wharves and other improvements, so as not to obstruct the navigation of the river." The word "shore" here seems to mean the space between the bank and low-water mark. The grants of Virginia could only extend to the "bank" of the river. So far her right was unquestioned. "Shore," therefore, could only have been used to designate the land from the bank of the river at low-water mark; for when the *bed of the river* is to be used, the compact stipulated, not for any right to the bed, but the *privilege of carrying out* wharves and other improvements. These shores could be of little advantage to Maryland on the navigable part of the river, but were of vital importance to the State owning the land immediately adjoining and behind them. Without them the right to the navigation of the river would have been of little use, and nothing could be landed on her banks without the permission of Maryland, or those to whom the shores should be granted by her. The "emoluments and advantages" belonging to the shores were such as I have referred to, with the right to alluvion; they certainly did not mean riparian rights, which required the diversion of the water of the river beyond the shore. The words themselves do not designate such a right. Such rights depend for the most part on the implied intention of grants giving the water *ad medium filum aque* of unnavigable rivers, and do not exist on the shores of navigable streams.—(3 Kent's Com., 7th edition, 514.) Suppose, however, the compact was intended to apply to the river above tide, and that it is to be considered an unnavigable river to which full riparian rights could attach, how were they acquired by the owners of the "Toulson tract"? Not by the original grant, for that extended only to the bank of the river; not by the cession of the shore by the compact, unless you consider that as extending the original grant to the river by implication, and, by implication also, to the middle of the stream, or consider the cession itself as an original grant, from bank to river, of the State of Maryland to the individual owner, carrying the grant to the middle of the stream. This would be a forced and unnatural construction, not justified by the situation of the parties to, or the nature of, the compact. Maryland owned the bed of the river as well as the shore. The bed of the river, and the water flowing over it, were of great value to her. The island also belonged to her. If she had intended to give so important a right, would she not have specified the river bottom as well as the shore, for by the ownership of that alone could full riparian rights be claimed. And what would these full rights be on a river flowing between two sovereign States? The whole bottom of the river, *ad medium filum aque* of the river, not of a portion of it, between a shore and an island. (Angell, 44.) The island would belong to the riparian owner to whose land it was the nearest, and instead of the shore at low-water mark being the boundary of the two States, the middle thread of the river through its whole extent would be the boundary, which evi-

dently was never the intention of the parties to the compact, especially of Maryland. If she had intended to make the middle thread of the river the boundary, she would have said so. But it is said further, in argument, that Maryland, by the act of 1784, ch. 33, secs. 13 and 21, recognised the existence of riparian rights in the State of Virginia on the shores of the Potomac. The 13th section of that law was intended to protect private property in Maryland as much as was the 11th and 12th sections. Maryland had no right to authorize the condemnation of land or materials in Virginia, or to interfere in any manner with its title. Water rights existed on the Maryland shore. These she could and did protect, leaving it to Virginia to protect the rights of her own citizens on her own soil. The 21st section did not require the confirmation of this law by Virginia. It was available without it for all intents and purposes, so far as it applied to the soil of Maryland. It only required, before it should be of any effect, that Virginia should pass a law upon *similar principles*, a law applying to her side of the river, without which the contemplated canal could not be constructed. Whether Virginia should authorize the condemnation of land, or restrict the canal company to purchases, or should protect the rights of the owners of private property, whatever they might be, was of no consequence to Maryland, so that the right to make the canal on her soil was given. Some of the provisions of the Virginia law were not necessarily required to be identical with those of Maryland—such as the amount of tolls, the places of taking them, &c. The 13th section was not even necessary to prevent the company from using the water in Virginia for other purposes than those of navigation. Maryland owned the water, and did not authorize its diversion for any other purpose. A negative provision on that subject was not necessary. But if the 13th section was intended to apply to lands in Virginia, it would only be construed as a grant *pro hac vice* to the owners of “convenient places” for erecting mills, &c., depending on the continued use of the canal for the purposes of its charter, and now ended.

This Toulson tract, therefore, has no riparian rights on the river Potomac. The riparian rights of the Great Falls Company depend entirely upon the ownership of Conn’s island, the title to which is derived from the State of Maryland through its grant. It is stated in the 12th section of Angell that the State of Maryland is entitled to certain unnavigable rivers and to the soil they occupy, and it is held by the courts there that if the State grants land in one of such rivers, and the grant calls for the river as a boundary, the grantee becomes riparian proprietor and entitled to the land the river covers “*ad medium flum aquæ*,” and refers for authorities to Ridgely against Johnston, 1 Bland Ch. Rep., 316; Baltimore *vs.* McKim, 3 Bland, 453, and Brown *vs.* Kennedy, 5 H. & J., 195.

The first authority is a decision of Chancellor Hansen in a note, in which he says: “That the common law doctrine of riparian rights applies in Maryland to small rivers.” Chancellor Bland, in Binney’s case, (2 Bland Ch. Rep., 123,) states the river Potomac to be an unnavigable river, and that the riparian holders of land would have an undoubted right, by the common law, to use the water in any manner

without injury to others. The same doctrine is repeated on page 11 "The whole of the river to its right bank forms a part of the territory of Maryland, so that the whole of it above tide is entirely within the respective counties of Maryland lying along it, and consequently, that its waters above tide may be taken and used by any riparian holder of land in any manner without prejudice to others."

In the case of *Brown vs. Kennedy* the majority of the court decided that the common law doctrine of riparian rights is also the law of Maryland. But for the admission of the parties I should have found some difficulty, notwithstanding, in applying these rights to such a river as the Potomac, as well as in ascertaining the extent of the rights of such riparian proprietor. But it was admitted in argument, that the proprietor of Conn's island, as riparian proprietor, owned the bed of the river on each side of the island to the middle of the stream on each side, and that the riparian owner opposite Conn's island, on the Maryland shore, owned only "*ad filum medium*" of that portion between the Maryland bank and the island. But supposing that no riparian rights are attached to the Toulson tract, who has property in the bed of the river and the use of the water between the middle thread from Conn's island and the Virginia shore? I can conceive of no other owner than the State of Maryland, both to the bed of the river and the use of the water.

What are the rights of riparian proprietors to the water? They have, strictly, no property in the water. They have the usufruct only.—(Angell, sec. 94.) "*Prima facie* every proprietor on each bank of the river is entitled to the land covered with the water to the middle thread of the stream. In virtue of this ownership he has the right to the *use of the water* flowing over it in its natural current without diminution or obstruction. But, strictly speaking, he has no property in the water itself, but a simple use of it as it passes along." (Angell, 95.) "The water power to which the riparian owner is entitled consists in the fall of the stream when in its natural state as it passes through his land, or along the boundary of it."—(Idem.) "Every man in this country has an unquestionable right to erect a mill on his own land, and to use the water passing through his lands as he pleases."—(Note 1, 4 Dallas, 211.) I can find no authority for a riparian proprietor to purchase land where no riparian right exists and to divert the water from his land through or by which the stream runs to that. He must use the water on his own land that gives him the right. I do not think that the owner of Conn's Island can divert the water appertaining to the riparian right of that island to the "Toulson tract" having no riparian rights, and being in another State. There seems to be no mill site on Conn's Island. If there be, the proprietor may use it there. If there be not, he cannot be damaged by the diversion of it. It has been said in some cases that whether a riparian proprietor can use the water which flows over or passes by his land or not, he still has a right that it should continue to run in its usual quantity, undiminished by any diversion above. The passage of the water in that quantity may gratify his eye, &c. and that it is only a question of damages. No doubt he may use it for any purpose, useful or ornamental, and has a right to as much

water as that purpose requires ; but it has never been so decided in this State, and I trust never will, especially with regard to such a river as the Potomac, containing so much water which may be applied to so many beneficial purposes other than those to which riparian owners can apply it. All, or nearly all, the tracts of land on the Potomac river must have been granted, and the riparian rights depending upon them therefore in existence before the State of Maryland authorized the appropriation of any, or at least of any considerable portion of the water to other purposes. She has done so, however, since, and very largely for canal navigation, by grants to the old Potomac Company, the Chesapeake and Ohio Canal Company, and one or more other canal companies. In doing so she made provisions for the condemnation of land through which the canal should pass, and the assessment of damages to the owner. In the exercise of that duty the jury were directed to value the land, and all damages the owner thereof shall sustain by cutting the canal through such land. In assessing these damages, the value of the land and any injury done to it, the injury to mill sites where the *owners could make use of the water by the abstraction* of the water, have I believe always been considered ; but I have never heard of any damage having been assessed for the abstraction of water, where it could not be used by the owner of the land—no such fanciful damages have ever been recognised as legitimate by the legislature of Maryland, or its courts, or its juries, and I think never will. The State of Maryland owns still a large ungranted portion of the bed of the river, and all the surplus water which cannot be used by its grantees. Connected with this question of riparian rights is one of jurisdiction, which I propose to treat as briefly as possible. The act of 1853 gives power to the United States to condemn land in *Maryland only*, and prescribes the mode of assessing damages to the owner of that land. For what? For injury done as we have before said to *that land* ; not for injury done to any other land, to which the owner may also have a title, whether an individual or an incorporated company. I do not mean injury to the soil alone, but injury to any right appendant to, or derived from the land. The land is to be condemned, not the appendant rights, or privileges. If the condemnation of the land and its appropriation to the purposes for which it was condemned, destroys or alters those rights, it is damage done to that land, and through it to the owner. The land itself becomes the property of the party condemning, and he is released, by paying the damages assessed, from the payment of any subsequent damages ; and the evidence of all his rights in the premises is placed on the records of the courts of this State. The damages in this case would be to the water-rights appendant to Conn's island, but the owner of that island cannot use the water on that island ; he has no mill seat there ; no damages therefore are done to that island. But he owns the "Toulson tract" in another State, and has we may suppose acquired the means of transferring the water to that tract, and using it there ; that tract possessing facilities for its use. To what tract then is the damage done? Assuredly to the Toulson tract, to which Maryland never has granted, never could grant, any right ; which she has not condemned and cannot condemn,

and has never pretended to condemn; to any part of which she can transfer no right, and therefore for an injury to which this special tribunal authorized to condemn land in Maryland can allow no damages. If to this tract is attached the right to use the water of the river, its owners have acquired an independent right to use it on that tract, the damage whatever it may be for the abstraction of the water may be recovered in the courts of Virginia. It would be the violation of territorial right of that State of which its courts alone could take cognizance. In condemning land and constructing the dam in Maryland, the United States act as the grantees of its right of eminent domain. In any injury done to the Toulson tract, they are either trespassers, or liable to an action on the case for the wrong; if an injury is done to it by the abutment of the dam on the tract purchased from Mr. Green. That right to purchase was granted with reservation of or subject to the rights of land holders in Virginia. It has given no right to any special tribunal to condemn or assess damages. Binney's case (2 Bland Chan.) referred to by the counsel on this point, is not at all in conflict with, but rather confirms the views I have taken. The chancellor was there speaking of the Chancery court having jurisdiction within the whole State, over lands in the State; or *in personam* over individuals or corporations in the State: (See page 147.) And again in page 148 speaking of the case of the company he says: "So far as regards the title to its immovable property, where it becomes necessary to restrain the making of an excavation or erection upon it, or to obtain redress for any injury done to it, the courts of justice under whose jurisdiction it lies may have exclusive cognizance of the matter." The dam, the erection of which is complained of, is to be extended entirely across the river Potomac, and therefore one part of it must rest upon the territory of Maryland and the other upon that of Virginia, consequently to that extent each State must have an exclusive jurisdiction, so far as may be necessary to prevent its erection, by injunction. "So far as the body politic may be restrained by an injunction from making such illegal expenditures any where, the courts of justice of each government must be allowed to have equal and concurrent jurisdiction, and this last point is the one decided in the page 149, referred to by the counsel. The jury authorized to condemn and assess damages in this case, has no power over persons or property or any jurisdiction whatever except what is delegated by the act of 1853 and a portion of the act of 1824, ch. 79. The only other important points in this case are the law as to the measure of damages, and the "alleged excess as allowed by the jury," which may both be considered together. There is no question arising in this case between the United States and the State of Maryland; so far as the latter had no power, it had by the act of 1853 given to the former the right to abstract from the Potomac river a sufficient supply of water for the Washington aqueduct. Some of the authorities are to the effect that such grants which go to deprive the citizen of his rights for a purpose should be construed strictly. Chancellor Bland in Binney's case seems to countenance that doctrine; but common sense, and I think the common law, which is said to be the perfection of human

reason, both sanction a liberal construction when the deprivation is for the purpose of accomplishing some great and beneficial public purpose.—(Tide-water Canal Company *vs.* Archer, 9 Gill and John, 480.)

The grant in all such cases is subject, of course, to the right of which it authorized the condemnation. The question is between the United States and the Great Falls Company. That company has a right to the value of the land condemned. The injury to the residue of the property, resulting from its loss from actual or probable overflow, the obstruction by the erection of the dam to the navigation around the island, and any loss or injury which may be sustained by the abstraction of the water which could be used on Conn's island; but the jury should consider as a deduction from this, the enhancement of the value of property by the construction of the aqueduct. The view which I have taken of the riparian rights supposed to result from the ownership of the "Toulson tract," renders it unnecessary for me to give any opinion in reference to any supposed violation of them. But as different views have been and may be taken by others, I will express my opinion upon them as briefly as possible. Some of the testimony filed in the case, and used before the jury, relates to the value of the water abstracted by the aqueduct in Washington, or at its mouth, and the company are said to have claimed one or the other of these values; but such a claim was not pressed in the argument before the court. Supposing the company to be entitled to full riparian rights to all the water running between Conn's Island and the "Toulson tract," on the opposite shore, its claim to the value of the water to the United States, *anywhere*, is totally inadmissible.

The right of a riparian proprietor to water flowing through his land is so well understood by all lawyers, that it is hardly necessary to refer to any authority to explain it. *Prima facie*, every proprietor on each bank of a river is entitled to the land covered with water to the middle thread of the stream. In virtue of this ownership, he has a right to the use of the water flowing over it in its natural current, without diminution or obstruction. But strictly speaking, he has *no property in the water itself*, but a simple use of it while it passes along.—(Angell, sec. 95, by Judge Story.)

He may use the water while *within his own premises*, yet he must allow it to pass in the inferior heritor.—(Idem, note.) If any one riparian proprietor could sell the water to be diverted permanently from the stream, or not to be returned to the stream at the lower termination of his property for the use of the proprietor below, any other above him could do the same; and if any part could be diverted, I can see no limit to the quantity.

No one can divert, sell, or give the water but the sovereign power, either in conveyance of its ownership of the ungranted part of the river, or to use for public purposes water undisposed of, or of its right of *eminent domain*; and in either case only by leaving enough for the use of the riparian proprietors, or by making compensation to them for its deprivation. Compensation and damages are used indiscriminately, though in a particular case one or the other might be the most appropriate word. When land is taken, the law provides that it

shall be valued ; where part of a water power to be used on any particular tract is taken, the proper mode of ascertaining the damage is to ascertain what the land is worth in the market with the whole water power, then to calculate what the value would be, diminished by the volume of water to be abstracted. The difference would be the proper compensation in damages. To ascertain the value of the "Toulson tract," the company proved by one witness, Mr. Dexter, a retired northern manufacturer, the value of the water power when developed to be of the enormous amount of \$500,000. This was testimony taken before the jury as admitted by the parties and also proved. In opposition to this we have the fact, that more than sixteen years ago the land was sold for about \$3,000, mortgaged—sold at public sale to pay the mortgage debt for about that sum. That also was before the jury. We have further testimony before the court, by an eminent gentleman of the engineer corps, that he was very recently prevailed upon, by the offer of a large compensation, to endeavor, as agent of the company, to sell the whole property ; and in pursuance of the agency he made sundry efforts to sell it, applying to sundry large capitalists at the north—offering the whole property, including the water power, for a sum less, or near about the damages assessed by the jury—but could find no purchasers. The whole property, it appears, has since been sold ; one-fourth absolutely, the other three-fourths conditionally. This is admitted in this case by the president of the company. The amount of the sale, however, is kept out of view. In estimating the damages the company contend that the jury should not be governed by the present value of the property, but should estimate the value of the water power, if developed, and the whole retailed to different purchasers at the prices of the same description of power at the north, deducting the costs of its development. They endeavor to sustain their position by proving that the water power at the north is nearly exhausted ; that this climate is better for the continued use of the water through the year, and that it is in greater proximity to the region producing the raw material, and that it is more convenient to its transportation ; overlooking the fact that there are great water powers much nearer the country itself where that material is produced, and which are now being appropriated, and where the climate is more propitious still. This testimony is intended to establish the fact that this great water power must soon be in demand and these great profits realized, in the face of the fact that the owners have in vain endeavored to sell it for a much smaller sum. This, however, they say is caused by the *incubus* of this aqueduct, abstracting only one-tenth of the whole water power at the lowest stage of the river, which lasts but a short time, being superabundant at all other times, and they offer testimony by a gentleman of much practical knowledge, but apparently of too sensitive and rather apprehensive nature, that manufacturers, *indeed* himself, are greatly opposed to any *interference* with their water power, and though having great confidence that the present superintendent of the aqueduct works would cause no unnecessary waste of water, yet that other officers of the government hereafter having charge of it, might not be so scrupulous, and by waste at the

sluices of the dam, and by inattention to their tightness, much more than one-tenth would be lost ; and it was argued that the United States government itself might be oppressive or not use a proper control over its officers. This does not seem to me to be a rational ground for increasing damages. It should not be presumed, and it is not likely that the government would sanction any wanton waste, or would not hold its officers to proper accountability for injury to its citizens by wanton or careless waste. If it should however, the courts of this State are competent, and would be prompt to offer redress, if the principle of "*sic utere tuo ut alienum non ledas*" be violated. But it would cause trouble and expense to resort to law for redress ; so it would if the rights of the company were violated by the canal company, or any of the riparian proprietors above. It was said, too, it was very inconvenient for manufacturing establishments not to have abundant water at all times. Such establishments are subject to this inconvenience almost everywhere, and some as was proved have provided other power for occasional use at such times. Now I do not think that compensation is only to be made for injury to works now built and in use, but should be given also for power which the party can now sell or use ; yet with regard to that power to use it advantageously should be considered in estimating damage. Can the owners in this case use it ? Is it wanted ? Can it be sold ? It appears not. The company contends on the authority of 11 Gill, that remote and contingent damages may be considered by the jury ; that they may speculate on probabilities of what the property may be worth after *any lapse of time*, and whether it will then be wanted and bought. It seems to me they have misapplied that decision. The injury in that case was of *pure damage* to the property by the overflow of a meadow at a high stage of the water, not permanent. Its liability to overflow should have been and was obvious both to the jurors and parties in the time of the condemnation. It might, however, not overflow at all, or for some considerable time, and therefore the judge says in a brief opinion, applying his remarks, although general, especially to this particular case, that the jury ought to have, and therefore should be presumed to have taken into consideration "remote and contingent damages, as well as immediate damages." But here is a case of injury, if there be any injury of a permanent diminution of value *at the present time* of present and permanent damage, which alone should be considered. It is a case entirely different from the one cited, and the jury are not at liberty to dive into futurity, to consider whether at some remote period, this water power may not possibly become of immense value and be sold for a very large amount. It is a matter of too great uncertainty, and no sufficient data could be found to form an opinion approximating to correctness, if they could. The principles of law by which a jury in this case should be governed, having been settled, it remains to show to what extent the jury were governed by mistakes in regard to them ; and to determine what effect the mistakes should have on the application to set aside the inquisition. An objection was made to the examination of the jurors for the purpose of ascertaining the principles and reasons which governed them in their estimate of damages. The jury were examined in the

case of *Grove vs. The Chesapeake and Ohio Canal Company*, 1162 and John., 398, and in the case in 9 Gill and Johns., 480, before Judges Purviance and Magruder in Harford county court, in a case very similar to the present, and where also the propriety of such an examination was decided. I concur fully with them in that decision. It might be shown by other means that incompetent testimony was submitted to the jury, or erroneous principles of law urged before them; but to what extent it influenced their minds in their estimate of damages could be ascertained in no other way than by their own testimony. That they were influenced, at least the greater number of them who signed the inquisition, and not only *influenced*, but by a great measure governed by them, was fully proved. Some believed that the company had the right to sell the water of the Potomac river, and therefore that the value of the water to the United States at the mouth of the aqueduct was the proper measure of damages; some that the company were entitled to the whole bed of the river between Conn's island and the "Toulson tract," many that the company had the right to use on the Toulson tract the whole water of the Potomac river running between the tract and the island, and that they had the right to estimate and give damages for the injury to that right, which might possibly be sustained at a remote period; that the whole width of the river could be used on the Toulson tract, which, although it was proved by experts might be done by diverting it into what was supposed to have been the old bed of the river as well as the dead-end canal, was proved by others well acquainted with the river, could be done on account of the freshets which overflowed it. All these, as well as the testimony taken before the court, as to the actual value of the property show conclusively that the inquisition was founded on gross mistakes, both as to law and fact, the damages very extravagant and excessive, and that the court is imperatively required *to set the inquisition aside and to order a new warrant to issue*. Some of the reasons assigned on the motion to set aside the inquisition, accusing the jury or some of them who signed the inquisition with being open upon by passion, prejudice or partiality in finding the inquisition, I do not think however, that this charge is sustained. It is said in some of the authorities that, in England it is the province of the sheriff to decide on the competency of witnesses and testimony and instruct the jury as to the law of the case. In some of the States the jury with or without the aid of the sheriff are left to make out these matters as well as the law can, and therefore an appeal is generally given as in this State. In some court of common law, that its errors may be corrected. Such juries in this State are in the same predicament. The sheriff is generally as little competent as the jurors to throw any light on the law of the case. The jurors are abandoned to the unrestrained argument of counsel on both sides, of course contradictory to each other, and with ingenuity, and to eloquent appeals to every motive by which they are supposed they may be influenced, without the benefit of any authoritative instruction upon which juries in courts of law are willingly, and what they are bound to obey. It is not to be wondered therefore, that considerable errors may be fallen into, or much injury done without either the necessity or propriety of attributing them

improper motives. It is probable they may be sometimes influenced in some slight degree, in common with most of their fellow citizens, by a leaning to that side which is generally considered in such cases the weaker party, but not sufficiently so to afford cause for setting aside the inquisition. It was said in argument that it was hardly worth while to set aside this inquisition, because the jury must ultimately determine the amount of damages, and that the opinion of the court on this occasion would not govern any subsequent jury. *That is a mistake.* There would be but little use in an appeal to the circuit court on account of errors in the decision of the jury, if a subsequent jury should be permitted to disregard the authoritative exposition of them. I conceive that a subsequent jury is under a legal obligation to abide by the decision of the court in this case, in all matters which it would be the province of the court to decide, as if they were a jury sitting in a court of law, and I presume it would be difficult to prevail upon any jury of the county to disregard such opinions. If, however, such should be the case, it would be as incumbent on the court to set aside such inquisition as it would a verdict in an action at law given contrary to its directions. I have given to this case all the consideration in my power. The great importance of a speedy decision, which has been urged by the parties, and the unusual pressure of other judicial business, has prevented me from giving as full and accurate an exposition of my views as I desired to do. Although I have examined, I have not been able, for these reasons, to comment fully on many authorities having an important bearing. Neither have I been able to examine some points connected with the case and made in the argument. I have not had the means of inquiring into *the character and extent* of riparian rights, derived from the grant of land or water courses in the State of Virginia, and some minor matters I have neglected. No valid order can be passed until the meeting of the circuit court on the first Monday in March, when the inquisition will be set aside and a new warrant issued.

NICHOLAS BREWER,
Circuit Judge.

STATE OF MARYLAND, *Montgomery County, set:*

I hereby certify that the foregoing has been truly taken and copied from the record and proceedings in said case.

In testimony whereof I hereto set my hand and affix the seal of the [SEAL.] circuit court for said county, this 21st day of February, eighteen hundred and fifty-nine.

JAMES G. HENING,
Clerk Circuit Court, Montgomery county.

Cost of copy, with seal and certificate, \$9 50.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

COMMUNICATING,

In compliance with a resolution of the Senate, certain letters of Mr. Perry, late secretary of legation of the United States at Madrid.

MARCH 2, 1859.—Read; motion to print referred to the Committee on Printing.

MARCH 3.—Report in favor of printing the usual number submitted, considered, and agreed to.

To the Senate of the United States:

In answer to the resolution of the Senate of the 23d instant, requesting a copy of certain letters of Horatio J. Perry, late secretary to the legation of the United States at Madrid, I transmit a report from the Secretary of State, with the documents which accompanied it.

JAMES BUCHANAN.

WASHINGTON, February 26, 1859.

DEPARTMENT OF STATE,
Washington, February 25, 1859.

The Secretary of State, to whom was referred the resolution of the Senate of the 23d instant, requesting the President to communicate to that body, "if in his opinion not incompatible with the public interest, a copy of a letter, or letters, from Horatio D. Perry, secretary of legation at Madrid, addressed, in 1854, to Mr. Marcy, Secretary of State, upon the subject of an overture for a treaty made by the Spanish minister for foreign affairs, (and also a copy of the programme of a treaty, if any,) described in a letter addressed to President Pierce as 'conceding immense benefits to our commerce, and securing the prompt and complete protection of the political, religious, and social rights of our citizens in future in every portion of the Spanish dominions, in consideration for similar benefits conceded to Spanish subjects and their commerce by the United States,'" has the honor to lay before the President a copy of the documents specified in the accom-

panying list, which are the only ones on file in the department relative to the subject of the Senate's resolution.

Respectfully submitted.

LEW. CASS.

The PRESIDENT of the United States

List of documents accompanying the report of the Secretary of State to the President of the 25th of February, 1859.

Mr. Perry to Mr. Marcy, with enclosures, September 17, 1854.

Mr. Perry to Mr. Marcy, (extract,) June 10, 1855.

Mr. Perry to Mr. Marcy.

LEGATION OF THE UNITED STATES,
Madrid, September 17, 1854.

SIR: I have just received from her Majesty's minister of state for foreign affairs a note making a formal proposition for the establishment of a mixed commission to sit at Madrid for the adjudication and final settlement of all claims involving private interests now pending between the United States and Spain, reciprocally taking for a model the convention concluded between the United States and Great Britain on the 8th of February, 1853, for a similar purpose, and committing the Spanish government to carry into full effect and execute a like arrangement with regard to all our existing differences of the nature.

I have the honor to enclose copies of the note and of my reply, and at the same time send duplicates of these papers to Mr. Soulé, in France.

I have the honor to remain, with the highest respect, sir, your obedient servant,

HORATIO J. PERRY.

HON. WILLIAM L. MARCY,
Secretary of State.

Mr. Pacheco to Mr. Perry.

[Translation.]

DEPARTMENT OF STATE,
Palace, September 16, 1854.

MY DEAR SIR: From the moment that I was entrusted with the portfolio of foreign affairs, I conceived it my duty to examine into all claims pending between Spain and other powers, in relation to injuries inflicted upon private individuals, for the purpose of bringing them to a settlement, if such were possible, and of consolidating and extending by that means, the good friendship which is entertained towards us by all nations and governments. The note which I addressed you on the

31st ultimo, in relation to the refitting of the North Carolina, is conclusive evidence of the sentiments and purposes by which I was actuated.

By deeply meditating upon the more prominent questions, and grasping them as a whole, I have been led to believe that we might succeed in making some arrangement whereby the final settlement of them all would be more promptly and efficiently secured.

The government of the American Union and that of her Britannic Majesty, on the 8th of February, of the preceding year, concluded a convention, the design of which was to bring to a settlement such remaining claims of a similar nature which might be pending between them, by agreeing upon the establishment of a commission of arbitrators, which should be stationed in London, composed of one delegate selected by each of the contracting parties, and a third one to be chosen by these two, or by lot, in case of disagreement, and by giving full authority to this commission to dispose of all questions then existing; these governments binding themselves beforehand to abide by and fulfill its decisions.

The mere intimation of such a system is a sufficient recommendation for its applicability to all cases similar to those which called forth the convention alluded to, and to such as are now at issue between the United States and Spain—claims which have their origin in private interests and in which reparation and indemnification is demanded for injuries inflicted.

But there is still another inducement, which is, that the government of the United States has, for several months past, itself given similar intimations to her Majesty's chargé d'affaires at Washington.

Accepting, therefore, these intimations, and taking as a precedent the convention to which I have alluded, I formally propose that we should come to some understanding whereby we might, with the same facility, dispose of and set at rest all those claims—claims made reciprocally by the parties and upon which the United States and Spain have insisted and do insist up to the present day. If this plan meets the views of the government of the United States, and it will agree to the establishment at Madrid of a mixed commission of arbitrators, having equal powers and under similar conditions with those agreed upon with England on the 8th of February, 1853, I shall affix my signature to such convention as we may conclude, with the greater pleasure from the belief that we shall have taken a step towards the better arrangement of our international relations.

I avail myself of this occasion to renew to you the assurances of my most distinguished consideration.

Your obedient and humble servant,

J. F. PACHECO.

The CHARGÉ D'AFFAIRES of the United States.

Mr. Perry to Mr. Pacheco.

LEGATION OF THE UNITED STATES,
Madrid, September 17, 1854.

SIR: I have had the honor to receive your excellency's note of the 16th instant, in which is expressed the sincere desire which animates you to find some means of settling and terminating all the claims for reparation and indemnity of injuries suffered by private individuals now pending between the governments of Spain and the United States and in which, after citing the convention concluded between the United States and Great Britain on the 8th of February, 1853, whereby the governments agreed to establish a mixed commission of arbitrators at London which should resolve all questions of a similar character then existing between them, and whose decisions those two governments agreed beforehand to acknowledge as final and to carry into effect after recalling also some indications made by the government of the United States to the chargé d'affaires of her Catholic Majesty at Washington not many months since.

Your excellency, accepting those indications and taking the example of the convention referred to, proceeds to make me a formal proposition that we do enter upon a road, in the opinion of your excellency, so easy, putting thus a term and conclusion to all the reclamations which the United States and Spain have reciprocally made upon each other and in which they have insisted and do insist to this day.

And your excellency says that, if the government of the United States shall accept this idea and will agree upon the establishment at Madrid of a mixed commission of arbitration, with like faculties and conditions with those which it agreed to with England on the 8th of February, 1853, your excellency will have much pleasure in putting your signature to the agreement which we may celebrate, believing that we shall thus have taken a step in the good road of our international relations.

In reply, I have the honor to say that the proposition of your excellency finds me without instructions upon the matter to which it relates, and I can do no more at present than to refer the note of your excellency to my government, which I shall take a sincere pleasure in effecting without delay.

I avail myself of this occasion to renew to your excellency the assurance of my most distinguished consideration, and remain your excellency's obedient servant,

HORATIO J. PERRY.

Mr. Perry to Mr Marcy.

[Extract.]

LEGATION OF THE UNITED STATES,
Aranjuez, June 10, 1855.

SIR: It is with regret that I am obliged to announce to you the retirement of Mr. De Luzuriaga from the Department of State of the Spanish government. The official announcement of this event I received only about an hour previous to the arrival of Mr. Dodge at this place. Mr. Luzuriaga has been unwell for some weeks, and was fatigued by the constant attacks made upon him in the Cortes and in the press, especially since his arrangement of the Black Warrior affair, by the fragments of the retrograde party, and other persons, little intelligent in affairs. A crisis occurring, in which the minister of the interior resolved to resign his place, upon a question concerning the national militia, Mr. Luzuriaga took advantage of the occasion to retire also, and three of his companions followed him.

This cannot but be regarded as an untoward event with respect to our affairs with Spain. The justice, freedom from prejudice, liberality and good sense of Mr. Luzuriaga, backed by his laboriousness and his firmness in carrying into effect the dictates of his judgment, as regards the affairs of the United States and Spain, will be difficult to replace.

The new ministers are men of the same political color as Mr. Luzuriaga, and Generals Espartero and O'Donnell still remain at the head of the government, the change having been of persons merely and not of policy. I am assured also, from the highest authority, that the march of affairs as regards ourselves will be continued in the same manner as before, and I have every reason to be confident that such will be the case. But the late minister had heard the cause of our government and people so often argued, explained and made clear to him, that the interests of the two governments, commercial and political, had come to be particularly well understood by him; and this work will have to be all gone over again with General Zabala, his successor.

With respect to the conclusion of a great treaty upon those subjects, the late minister was prepared and anxious for it. Since my residence at Aranjuez, he has frequently taken occasion, of his own accord, to confer with me upon that subject.

In one of our recent interviews, he said to me in these words: "I wish to give to the United States all the benefit which they could expect to gain by a conquest of Cuba, and I believe all that can be combined with the true interests of Spain in that colony."

We had entered often and deeply into the matter of the stipulations which it would be desirable to establish between the United States and Spain. Mr. Luzuriaga told me that one of his chief difficulties was the question of the flour duties.

The interests connected with the protection of the flour trade in old Spain were so considerable as to make the abolition of the discrimination against American flour in Cuba almost impossible.

He offered, however, to abolish the immense duties now paid upon our flour, preserving a small duty, however, and still maintaining some discrimination in favor of Spanish grown wheat.

This question of a complete abolition of the discrimination in Cuban flour duties I consider as entirely of secondary importance in comparison with other points to be settled by the treaty alluded to, but as the Spanish minister seemed to think it a great matter, and difficult, I have also maintained it in that rank, in order that the United States might be able to yield it at last, if necessary, in consideration for some other concession on the part of Spain, of great importance to us.

* * * * *

Hon. WILLIAM L. MARCY,
Secretary of State.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

RECOMMENDING

That provision be made for the payment of appropriations, and to meet the outstanding Treasury notes.

MARCH 3, 1859.—Read and ordered to be printed.

To the Senate and House of Representatives :

An imperative sense of duty compels me to make an appeal to Congress to preserve the credit of the country. This is the last day of the present Congress, and no provision has yet been made for the payment of appropriations and to meet the outstanding treasury notes issued under the authority of law. From the information which has already been communicated to Congress by the Secretary of the Treasury, it is manifest that the ordinary receipts into the treasury, even under the most favorable circumstances, will scarcely meet the ordinary expenses of the government during the remainder of the present fiscal year, ending on the 30th of June. At that time nearly eighteen millions of treasury notes will have become due, and many of those not yet due are daily paid for duties at the different ports, and there will be no means in the treasury to meet them. Thus the country, which is full of resources, will be dishonored before the world, and the American people, who are a debt-paying people, will be disgraced by the omission on our part to do our duty. It is impossible to avoid this catastrophe unless we make provision this very day to meet the lawful demands on the public treasury. If this were the first instead of the last session of a Congress the case would be different. You might then be convened by proclamation for to-morrow morning. But there are now thirteen States of the Union, entitled to seventy-eight representatives, in which none have been elected. It will therefore be impracticable for a large majority of these States to elect their members before the treasury shall be compelled to stop payment.

Under these circumstances I earnestly recommend to Congress to make provision, within the few remaining hours of the session, for the preservation of the public credit. The urgency of the case not only justifies but demands that, if necessary, this shall be done by a separate bill. We ought to incur no risk when the good faith of the country is at stake.

JAMES BUCHANAN.

WASHINGTON, March 3, 1859.

REPORT
OF THE
SECRETARY OF THE TREASURY,

IN ANSWER TO

1 resolution of the Senate, calling for statistics of trade with Cuba for the last five years.

MARCH 3, 1859. —Motion to print referred to the Committee on Printing. Report in favor of printing the usual number submitted, considered, and agreed to.

TREASURY DEPARTMENT,
March 2, 1859.

SIR: In reply to Senate resolution adopted January 19, 1858, requesting the Secretary of the Treasury "to furnish the Senate a list of all articles exported to the Island of Cuba, from the several ports of the United States, for each year for the last five years, specifying the estimated value of such articles; together with a list and estimate of the articles imported into the United States, at the several ports, from that island," I have the honor to transmit herewith statements prepared by the Register of the Treasury, exhibiting the desired information.

All which is respectfully submitted.

HOWELL COBB,
Secretary of the Treasury.

HON. JOHN C. BRECKINRIDGE,
Vice President and President of the United States Senate.

Statement exhibiting the imports from Cuba into each collection district of the
and 1858

Districts.	Years ending June 30.	FREE OF DUTY.			PAYING DUTIES AND VALORES.					
		Specie and bullion.	Other articles.	Total.	Iron and manufactures of.	Copper, and manufactures of.	Wood, and manufactures of.	Raw hides and skins.	Monney.	
Boston and Charlestown.	1854	.....	\$2,187	\$2,187	\$3,555	.....	\$48,823	.....	.....	.....
	1855	.....	1,009	1,009	2,356	.....	37,392	.....	.....	.....
	1856	.....	2,632	2,632	.....	453	191	.....	.....	.....
	1857	.....	64,905	64,905	49	722	19,392	.....	.....	.....
	1858	.....	29,714	29,714	630	.....	21,422	.....	.....	.....
		.....	100,447	100,447	6,592	1,366	152,422	.....	.....	.....
New York.....	1854	\$28,871	68,455	97,326	4,032	34,102	197,920	94,920	.....	.....
	1855	54,766	81,506	136,272	2,532	23,931	115,871	8,622	.....	.....
	1856	12,604	43,820	56,424	7,670	24,986	109,227	8,229	.....	.....
	1857	230,464	28,976	319,440	4,527	18,363	92,960	28,709	.....	.....
	1858	1,585,008	100,411	1,685,419	674	185	86,811	2,174	.....	.....
		1,901,712	393,168	2,294,881	26,435	101,573	602,859	73,484	.....	.....
Philadelphia.....	1854	11,000	49,994	60,994	3,160	.....	3,040	.....	.....	.....
	1855	.....	439	439	215	867	6,125	.....	.....	.....
	1856	.....	1,311	1,311	61	145	1,266	.....	.....	.....
	1857	400	1,628	2,028	237	883	2,016	3,281	.....	.....
	1858	.....	5,792	5,792	3,946	.....	433	.....	.....	.....
		11,400	59,160	70,560	7,619	1,892	12,680	3,281	.....	.....
Baltimore.....	1854	.....	32,620	32,620	24	.....	67	.....	.....	.....
	1855	.....	91,941	91,941	.....	.....	300	.....	.....	.....
	1856	.....	67,963	67,963	19	.....	.....	.....	.....	.....
	1857	.....	13,278	13,278	112	.....	211	524	.....	.....
	1858	.....	44,105	44,105	.....	.....	669	.....	.....	.....
		.....	249,207	249,207	155	.....	1,267	524	.....	.....
Charleston.....	1854	1,020	37,127	38,147	15	.....	72	4,171	.....	.....
	1855	.....	85	85	.....	.....	12	.....	.....	.....
	1856	.....	122	122	.....	.....	102	.....	.....	.....
	1857	.....	154	154	.....	.....	69	.....	.....	.....
	1858	124,173	154	124,327	.....	.....	.....	.....	.....	.....
		125,193	37,642	162,835	15	.....	255	4,171	.....	.....
New Orleans.....	1854	25,907	122,306	148,213	.....	.....	342	.....	.....	.....
	1855	113,661	104,432	218,093	.....	.....	514	.....	.....	.....
	1856	3,031	264,621	267,652	.....	.....	527	.....	.....	.....
	1857	370,370	208,620	578,990	.....	.....	537	.....	.....	.....
	1858	2,671,583	331,686	3,003,279	.....	.....	622	528	.....	.....
		3,124,552	1,026,675	4,151,227	.....	.....	2,613	528	.....	.....
Passamaquoddy.....	1856	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland.....	1854	.....	226	226	.....	659	.....	.....	.....	.....
	1855	.....	237	237	.....	.....	.....	.....	.....	.....
	1856	.....	15	15	.....	283	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	137	137	.....	.....	.....	.....	.....	.....
		.....	625	625	.....	942	.....	.....	.....	.....

United States during the fiscal years ending June 30, 1854, 1855, 1856, 1857, respectively.

PAYING DUTIES AD VALOREM.							AGGREGATE INTO EACH DISTRICT.		
Molasses.	Cocoa.	Sugars.	Fruits.	Tobacco, and manufactures of.	Rags.	Other articles.	Free.	Dutiable.	Total.
\$359,379 898,702 871,835 1,438,081 638,449	..... ..... \$14,238 4,870	\$1,989,981 2,100,046 2,516,093 4,431,391 1,949,483	..... \$339 637 2,436 4,372	\$179,186 131,877 197,700 167,123 139,947	..... ..... ..... ..... .....	\$85,959 31,872 35,616 22,856 3,878	\$2,187 1,009 2,632 64,905 22,714	\$2,866,063 3,937,790 3,700,197 6,121,169 2,761,979	\$2,868,950 3,938,799 3,702,689 6,188,087 2,790,886
4,394,280	19,106	12,968,804	7,774	815,932	.....	179,481	100,447	18,686,414	18,786,861
603,439 764,897 990,967 2,148,761 1,021,305	..... ..... ..... 58,270 1,490	6,029,902 7,194,373 10,750,774 31,914,507 10,367,525	920 79,135 44,682 51,362 74,781	\$2,257,382 2,141,430 2,375,818 2,358,379 1,875,920	\$16,954 25,032 23,256 18,079	192,987 62,548 91,166 49,919 43,690	97,326 136,279 56,494 319,440 1,685,419	9,380,327 10,494,978 14,532,200 26,189,625 13,588,130	9,457,653 10,631,950 14,586,704 26,509,265 15,273,549
5,529,382	59,760	55,556,281	943,180	11,008,989	83,331	440,310	2,294,881	74,165,540	76,460,421
908,853 166,640 386,082 738,461 129,735	..... 6 2	1,125,864 1,275,900 1,651,874 2,367,980 1,965,180	..... 2,047 1,151 590 1,028	256,123 230,320 232,562 239,015 296,705	..... ..... 407 654	27,904 3,992 1,418 1,797 1,792	60,994 429 1,311 2,028 5,798	1,694,944 1,697,087 2,260,060 3,359,379 1,685,293	1,685,938 1,697,616 2,260,371 3,361,307 1,691,091
1,679,741	6	7,685,326	4,810	1,184,725	1,061	36,770	70,560	10,655,663	10,726,223
47,131 31,983 78,038 223,484 102,184	..... ..... ..... ..... .....	396,931 329,871 592,113 1,134,523 735,369	..... 194 549 1,891 779	31,466 10,383 30,310 15,367 13,078	..... ..... 6	168 2,471 146 5,385 84	32,620 91,241 67,963 13,278 44,105	377,807 375,199 613,118 1,384,542 854,274	410,427 466,440 681,061 1,397,680 896,379
482,180	.....	3,000,817	3,413	100,634	6	8,254	249,207	3,604,940	3,854,147
68,954 73,967 82,917 175,124 584,285	..... ..... ..... ..... .....	122,124 94,945 93,666 206,139 914,534	..... 14,963 13,515 11,406 13,071	107,509 82,674 75,176 90,976 143,522	..... ..... ..... ..... .....	16,506 1,268 1,530 587 1,593	38,147 85 192 154 194,397	319,351 267,145 265,977 466,396 497,598	357,498 267,239 266,099 466,562 691,915
524,918	.....	733,408	51,855	499,857	.....	21,484	162,835	1,836,459	1,999,294
11,363 14,955 2,786 584,285 27,879	3,558 1,713 3,684 563	161,083 149,914 567,570 3,309,923 665,321	..... 29,743 24,952 14,528 18,732	603,221 433,685 494,943 551,253 673,675	..... ..... ..... ..... .....	40,360 31,511 24,170 18,945 18,469	906,213 223,093 267,652 678,990 3,003,279	819,927 663,035 1,120,017 4,491,454 1,408,627	1,028,140 886,198 1,367,669 5,070,444 4,411,906
651,968	10,199	4,853,111	87,956	2,756,277	.....	131,455	4,281,227	8,563,060	12,784,267
12,480 895	..... .....	..... .....	..... .....	..... 788	..... .....	..... .....	..... 12,480 1,683	..... ..... .....	..... 12,480 1,683
13,375	.....	.....	.....	788	.....	.....	.....	14,163	14,163
593,701 616,632 698,565 1,008,236 649,622	..... ..... ..... ..... .....	125,450 317,229 251,456 340,037 273,784	..... 183 143 192 292	969 851 1,767 5,643 13,402	..... ..... ..... ..... .....	110 739 637 481 173	296 237 15 137	723,896 985,640 252,895 1,354,592 937,279	724,194 985,877 252,910 1,354,592 937,416
3,566,756	.....	1,340,965	816	22,632	.....	2,134	685	4,934,304	4,934,989

Districts.	Year ending June 30.	FREE OF DUTY.			PAYING DUTIES AND VALORES.				
		Specie and bullion.	Other articles.	Total.	Iron, and manufactures of.	Copper, and manufactures of.	Wood, and manufactures of.	Raw hides and skins.	Money.
Belmont	1854								
	1855								
	1856								
	1857								
	1858								
Bangor.....	1854								
	1855								
	1856								
	1857								
	1858								
Penobscot	1854								
Waldoboro'	1854								
Bath	1854								
Frenchman's Bay.....	1855								
Portsmouth, N. H.	1854								
Newburyport	1854								
	1855								
	1856							313	
								313	
Barnstable.....	1855								
Salem and Beverly....	1855								
Nantucket.....	1855								
	1856								
New Bedford	1854								
	1855								115
	1856								115
	1857								
	1858								
Edgartown.....	1855								
	1857								
Fall River	1855								
	1856								
	1857								
	1858								

—Continued.

PAYING DUTIES AD VALOREM.							AGGREGATE INTO EACH DISTRICT.		
Molasses.	Cocoa.	Sugars.	Fruits.	Tobacco, and manufactures of.	Wags.	Other articles.	Free.	Dutiable.	Total.
\$9,990								\$9,990	\$9,990
8,836								8,836	8,836
13,389		\$915						14,304	14,304
673		111						783	783
3,931								3,931	3,931
36,051		1,026						37,077	37,077
48,686		7,995						55,981	55,981
56,758		5,559						62,316	62,316
37,751								37,751	37,751
62,326		1,091						63,419	63,419
43,795		2,973						46,770	46,770
269,316		16,919						286,237	286,237
3,716								3,716	3,716
		573						573	573
2,774								2,774	2,774
409								409	409
18,033		9,925						27,957	27,957
1,492		2,980						4,452	4,452
9,983								9,983	9,983
1,764		3,753				\$148		5,978	5,978
13,238		6,713				148		20,412	20,412
2,474								2,474	2,474
14,299		18						14,310	14,310
1,996								1,996	1,996
2,110								2,110	2,110
3,406								3,406	3,406
17,676		45		\$46		19		17,779	17,779
17,081				50				17,249	17,249
98,124								98,237	98,237
8,582		2,006	\$485	26				10,645	10,645
71,463		2,051	485	192		19		74,491	74,491
8								18	18
		16						16	16
8		16						34	34
1,831		4,904	88	244				7,835	7,835
3,078			95					3,103	3,103
4,936		5,775	79					10,790	10,790
5,153		625	16					5,894	5,894
15,006		11,306	206	244				27,536	27,536

STATEMENT

Districts.	Years ending June 30.	FREE OF DUTY.			PAYING DUTIES AD VALOREM.				
		Specie and bullion.	Other articles.	Total.	Iron, and manufactures of.	Copper, and manufactures of.	Wood, and manufactures of.	Raw hides and skins.	Money.
Providence	1854	.....	16	16	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	1,155	1,155	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Newport	1854	.....	19	19	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	5	5	.....	.....	.....	.....	.....
Bristol and Warren	1854	.....	4	4	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	4	4	.....	.....	.....	.....	.....
Richmond	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	1,439	1,439	.....	.....	.....	.....	.....
	1858	.....	192	192	.....	.....	.....	.....	.....
Norfolk and Portsmouth.	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	5,349	.....	5,349	.....	.....	.....	.....	.....
Alexandria	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Camden, N. C.	1854	.....	31	31	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Wilmington, N. C.	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown, S. C.	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Savannah	1854	.....	.....	.....	.....	.....	.....	.....	.....
	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....

—Continued.

PAYING DUTIES AD VALOREM.							AGGREGATE INTO EACH DISTRICT.		
Molasses.	Cocoa.	Sugars.	Fruits.	Tobacco, and manufactures of.	Rags.	Other articles.	Free.	Dutiable.	Total.
\$65,634		\$14,377		\$532		\$1,505	\$16	\$81,997	\$82,014
37,511		14,574		79		8		52,177	52,177
67,425		17,949		1,086		19		86,697	86,697
108,330		12,623		363		7	1,155	120,932	120,932
36,559		65		99		125		36,927	36,927
315,359		58,836	565	2,115		1,664	1,171	378,661	379,632
23,494		34		1,968		193	19	24,919	24,938
15,105			139	244				15,586	15,586
10,645		7	66	782				11,892	11,892
17,473			310	1,047				18,830	18,830
16,003		14,456	121	489			5	31,060	31,065
82,920		14,499	636	3,839		123	24	102,237	102,261
42,917		80		109		12	46	43,171	43,919
47,821		48	26	349		4		48,966	48,966
36,942		4,480	46			6		40,774	40,774
50,485		8,363						58,918	58,918
33,918		11,580	146	26				45,668	45,668
211,383		24,665	290	586		22	48	236,817	236,865
14,793		12,302		3,146		939		31,180	31,180
8,696				371				9,374	9,374
23,141		19,641		4,452		35		47,969	47,969
106,852		111,021	309	2,327		890	1,439	224,768	224,768
13,362		32,286	404	4,062			192	50,116	50,308
169,046		175,262	713	14,356		1,794	1,631	361,268	362,899
28,078		86		7,489		607		36,960	36,960
19,790		8,369	3,6	3,848				28,975	28,975
22,547			154	6,946		216		29,921	29,921
			60					60	60
		15					5,349	15	5,364
70,415		14,370	575	17,585		823	5,349	97,631	102,180
						165		165	165
831							31	1,666	1,691
73,965		6,753		390		649		81,757	81,757
68,059		7,419	963	929				76,669	76,669
66,564			217	2,423				69,904	69,904
65,449		8,264	669	954				74,599	74,599
64,514			1,111	475				66,100	66,100
326,544		22,489	2,873	3,764		640		368,258	368,258
2,957			86					3,052	3,052
1,681								1,681	1,681
3,978			85					4,073	4,073
64,393		2,237		4,970		2,445		74,644	74,644
56,812		316	3,336	8,406		81		65,963	65,963
73,587		7,330	4,575	9,863				95,502	95,502
104,433		76,871	3,510	10,357				195,436	195,436
89,045		28,409	5,967	4,895		189		126,675	126,675
368,200		115,179	17,387	36,491		2,658		502,640	502,640

STATEMENT

Districts.	Years ending June 30.	FREE OF DUTY.			PAYING DUTIES AD VALOREM.				
		Specie and bullion.	Other articles.	Total.	Iron, and manufactures of.	Copper, and manufactures of.	Wood, and manufactures of.	Raw hides and skins.	Money.
St. Mary's	1858	.....	.....	.....	.....	.....	.....	.....	.....
Mobile	1854	\$57,540	\$7,181	\$64,721	.....	.....	.....	.....	.....
	1855	10,000	.....	10,000	.....	.....	.....	.....	.....
	1856	2,050	.....	2,050	.....	.....	.....	.....	.....
	1857	.....	4,032	4,032	.....	.....	.....	.....	.....
	1858	64,492	.....	64,492	.....	.....	53	.....	.....
		134,082	11,803	145,885	.....	.....	53	.....	.....
Pensacola	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
Apalachicola	1855	.....	.....	.....	.....	.....	.....	.....	.....
	1856	.....	.....	.....	.....	.....	.....	.....	.....
	1857	.....	.....	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....	.....	.....
St. Mark's	1854	.....	.....	.....	.....	.....	.....	.....	.....
St. John's	1856	.....	.....	.....	.....	.....	.....	.....	.....
Fernandina	1858	.....	.....	.....	.....	.....	.....	.....	.....
Key West	1854	2,220	2,220	4,500	.....	.....	198	.....	.....
	1855	5,080	1,453	6,513	.....	.....	1,571	.....	.....
	1856	6,260	4,120	10,380	.....	.....	.....	.....	.....
	1857	38,905	274	39,179	.....	.....	5	.....	.....
	1858	4,070	1,190	5,190	.....	.....	90	.....	.....
		56,515	9,257	65,772	.....	.....	1,862	.....	.....
Teche	1857	.....	.....	.....	.....	.....	.....	.....	.....
Brasos de Santiago	1856	.....	1,457	1,457	486	.....	.....	.....	.....
SUMMARY.									
Total imports from Cuba.	1854	196,558	382,529	509,087	10,786	\$34,787	250,530	\$98,191	.....
	1855	183,487	285,392	468,879	12,105	25,251	161,785	8,622	183,487
	1856	23,945	366,102	410,047	8,230	25,605	137,273	2,272	162,191
	1857	630,139	395,051	1,025,190	4,925	19,962	115,268	32,514	191,211
	1858	4,454,673	513,332	4,968,007	5,259	166	110,262	2,283	130,262
		5,418,804	1,062,406	7,381,210	41,311	105,776	775,135	82,522	602,211

A portion of the copper, imported in 1858, came in free of duty under tariff of 1857.
Money was not enumerated in the forms of 1854.

TREASURY DEPARTMENT, Register's Office, February 28, 1859.

—Continued.

PAYING DUTIES AD VALOREM.							AGGREGATE INTO EACH DISTRICT:		
Molasses.	Cocoa.	Sugars.	Fruits.	Tobacco, and manufactures of.	Bags.	Other articles.	Free.	Dutiable.	Total.
.....	\$811	\$229	\$18	.....	.....	.....	\$1,058	\$1,058
.....	6,841	.....	\$6,759	\$64,791	13,596	78,317
.....	1,516	7,318	6,409	.....	81	10,000	15,371	25,371
.....	8,452	16,381	.....	188	2,950	22,041	25,091
\$280	530	3,065	32,919	.....	45	4,692	36,166	40,816
.....	3,016	6,791	59,714	.....	1,323	64,492	70,993	135,485
280	5,068	22,689	121,567	.....	8,369	145,888	159,197	305,083
.....	381	640	.....	.....	.....	1,081	1,081
.....	508	15	.....	.....	.....	517	517
.....	66	338	.....	.....	.....	404	404
.....	136	.....	.....	.....	.....	136	136
.....	1,085	993	.....	.....	.....	2,078	2,078
.....	687	31	.....	.....	.....	698	698
1,710	929	30	.....	.....	.....	2,699	2,699
5,434	459	30	.....	.....	.....	5,883	5,883
.....	456	30	.....	.....	.....	486	486
7,144	2,541	91	.....	.....	.....	9,776	9,776
.....	65	.....	65	65
.....	273	10	.....	.....	.....	283	283
.....	366	80	.....	.....	.....	446	446
304	6,864	.....	2,946	.....	3,881	4,500	13,491	17,591
.....	805	3,119	2,827	.....	2,166	6,513	10,488	17,001
1	16,389	5,710	3,977	.....	1,608	10,390	27,595	37,985
379	4,589	3,366	4,339	.....	2,607	39,179	15,279	54,458
33	1,107	6,093	3,614	.....	2,149	5,190	13,095	18,285
717	29,654	18,291	16,994	.....	12,411	65,778	79,948	145,730
.....	193	404	.....	.....	.....	599	599
.....	433	125	.....	11,760	1,457	13,870	15,397
2,508,588	\$3,568	9,918,405	220	3,499,969	\$16,954	380,384	509,087	16,615,252	17,194,339
2,931,335	1,719	11,534,196	136,081	3,055,233	25,032	136,623	468,879	18,156,460	18,685,339
3,510,609	17,929	16,404,389	103,857	3,454,919	23,689	166,808	410,047	24,025,646	24,435,663
6,859,175	63,813	33,934,394	95,325	3,480,154	16,733	101,382	1,023,190	44,917,911	45,943,101
3,051,156	2,053	15,568,917	134,608	3,159,756	.....	73,394	4,968,007	22,946,839	27,214,646
18,860,863	89,065	86,660,194	470,029	16,612,031	84,386	860,551	7,381,210	125,262,106	132,643,312

Not all kinds of fruit were enumerated in the forms of 1854.

Bags were free of duty in 1858, under the tariff of 1857, and their value is therefore included in that of "other articles" free of duty imported during that year.

F. BIGGER, Register.

Statement exhibiting the value of exports, the growth, produce, and manuf.
30, 1854, 1855, 1856, 1857,

Districts.	Years.	Oil.	Fish.	Wood, and manu- factures of.	Beef and tallow.	Butter and cheese	Pork, lard, hams, and bacon.
Boston	1854	\$92,503	\$75,213	\$367,672	\$5,838	\$13,283	\$57,94
	1855	59,107	57,875	440,683	3,272	9,971	56,63
	1856	44,800	93,770	439,935	2,120	7,248	30,84
	1857	37,835	86,703	349,601	3,848	7,753	41,24
	1858	39,391	69,800	276,185	4,991	6,450	66,23
		263,036	373,461	1,874,086	90,167	46,705	255,719
New York	1854	24,461	91,389	318,717	19,786	25,728	119,65
	1855	19,811	15,845	784,946	19,686	31,172	197,115
	1856	29,698	23,850	726,936	14,983	31,580	222,354
	1857	26,318	39,033	773,893	16,025	41,662	344,95
	1858	41,758	26,946	767,124	40,425	64,045	391,93
		144,046	127,163	3,391,616	103,915	194,187	1,285,121
Philadelphia	1854	18,918	1,355	102,949	57,934	15,973	180,317
	1855	8,797	3,116	113,352	45,168	13,049	64,289
	1856	6,943	11,900	151,499	38,301	25,037	62,613
	1857	12,703	1,793	187,717	47,026	27,542	61,762
	1858	5,609	904	184,737	63,549	30,844	106,985
		52,970	19,068	739,474	251,298	112,435	458,197
Baltimore	1854	111	60	17,439	792	2,943	15,285
	1855	1,475	240	41,016	1,075	483	61,435
	1856	887	6,844	49,944	1,064	2,931	24,280
	1857	1,011	.....	49,898	3,572	3,091	21,032
	1858	437	795	47,034	644	3,510	69,071
		3,921	7,869	205,314	7,077	12,958	162,106
Charleston	1854	.....	330	36,053	.....	.....	2,850
	1855	.....	.....	43,985	.....	.....	619
	1856	.....	.....	14,584	943	.....	7,226
	1857	.....	116	99,395	583	869	31,174
	1858	.....	.....	38,094	233	155	12,646
		.....	446	162,121	1,059	1,094	54,515
New Orleans	1854	45	146	17,287	109,940	33,515	995,386
	1855	571	.....	37,620	101,435	16,702	1,033,534
	1856	846	.....	19,046	87,537	20,071	1,143,964
	1857	88	.....	153,966	63,581	20,354	1,066,018
	1858	914	688	27,643	162,071	34,572	1,282,126
		2,464	834	253,892	594,564	125,214	5,687,289
Passamaquoddy	1854	.....	.....	4,436	.....	.....	.....
	1855	.....	.....	3,019	.....	.....	.....
	1856	.....	.....	7,585	.....	.....	.....
	1857	.....	.....	8,553	.....	.....	.....
	1858	.....	192	18,892	.....	.....	.....
		.....	192	49,405	.....	.....	.....
Machias	1854	.....	.....	13,985	.....	.....	.....
	1855	.....	.....	9,668	.....	.....	.....
	1856	.....	.....	9,642	.....	.....	.....
	1857	.....	.....	27,070	.....	.....	.....
	1858	.....	.....	74,068	.....	.....	.....
		.....	.....	133,743	.....	.....	.....

STATEMENT

Districts.	Years.	Oil.	Fish.	Wood, and manu- factures of.	Beef and mallow.	Butter and cheese.	Pork, lard, hams, and bacon.
Frenchman's Bay.....	1854	.....	.....	\$9,580	.....	.....	.....
	1855	.....	.....	12,838	.....	.....	.....
	1856	.....	.....	5,688	.....	.....	.....
	1857	.....	.....	1,785	.....	.....	.....
	1858	.....	.....	3,268	.....	.....	.....
				33,179			
Penobscot.....	1854	.....	.....	4,500	.....	.....	.....
	1855	.....	.....	90,254	.....	.....	.....
	1856	.....	.....	9,335	.....	.....	.....
	1857	.....	.....	11,647	.....	.....	.....
	1858	.....	.....	9,056	.....	.....	.....
				55,014			
Wiscasset.....	1854	.....	.....	47,517	.....	.....	.....
	1855	.....	.....	33,070	.....	.....	.....
	1856	.....	.....	19,366	.....	.....	.....
	1857	.....	.....	7,441	.....	.....	.....
	1858	.....	.....	18,507	.....	.....	.....
				194,901			.....
Bath.....	1854	.....	.....	68,715	.....	.....	.....
	1855	.....	.....	136,331	.....	.....	.....
	1856	.....	.....	67,903	.....	.....	.....
	1857	.....	.....	39,983	.....	.....	.....
	1858	.....	.....	48,834	.....	.....	.....
				361,066			.....
Portland and Falmouth..	1854	.....	\$6,581	611,518	\$480	\$993	\$1,722
	1855	\$911	13,865	933,874	416	.....	1,357
	1856	1,960	90,140	641,886	1,643	537	365
	1857	.....	9,531	894,025	2,108	184	2,747
	1858	768	7,655	798,930	75	562	3,325
		3,651	57,179	3,810,936	4,730	1,636	2,386
Saco.....	1854	.....	.....	8,450	.....	.....	.....
	1855	.....	.....	6,554	.....	.....	.....
	1856	.....	.....	1,787	.....	.....	.....
	1857	.....	.....	2,658	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....
				19,449			
Belfast.....	1854	.....	60	33,918	.....	.....	.....
	1855	.....	.....	57,398	.....	.....	.....
	1856	.....	.....	45,398	.....	.....	.....
	1857	.....	.....	91,477	.....	.....	.....
	1858	.....	170	13,975	.....	.....	.....
			230	171,896			
Bangor.....	1854	.....	.....	48,968	.....	.....	.....
	1855	.....	.....	73,570	.....	.....	.....
	1856	.....	.....	47,679	350	.....	.....
	1857	.....	368	36,598	.....	.....	.....
	1858	.....	39	65,937	.....	.....	.....
			400	973,708	350		
Newburyport.....	1855	.....	.....	3,365	.....	.....	.....

—Continued.

Flour and grain.	Vegetables.	Rice.	Soap and candles.	Iron, and manu- factures of.	Household furni- ture.	Carriages, and parts of.	Coal.	All other articles.	Total.
.....	.....	.....	.....	.....	.....	.....	.....	.....	\$9,590
.....	.....	.....	.....	.....	.....	.....	.....	.....	12,639
.....	.....	.....	.....	.....	.....	.....	.....	.....	5,698
.....	.....	.....	.....	.....	.....	.....	.....	.....	1,765
.....	.....	.....	.....	.....	.....	.....	.....	.....	3,222
.....	.....	.....	.....	.....	.....	.....	.....	.....	33,172
.....	.....	.....	.....	.....	.....	.....	.....	.....	4,500
.....	.....	.....	.....	.....	.....	.....	.....	.....	20,254
.....	.....	.....	.....	.....	.....	.....	.....	.....	9,355
.....	.....	.....	.....	.....	.....	.....	.....	.....	11,647
.....	.....	.....	.....	.....	.....	.....	.....	\$778	9,836
.....	.....	.....	.....	.....	.....	.....	.....	778	55,792
.....	.....	.....	.....	.....	.....	.....	.....	.....	47,717
.....	.....	.....	.....	.....	.....	.....	.....	.....	32,070
.....	.....	.....	.....	.....	.....	.....	.....	.....	19,366
.....	.....	.....	.....	.....	.....	.....	.....	.....	7,441
.....	.....	.....	.....	.....	.....	.....	.....	.....	18,507
.....	.....	.....	.....	.....	.....	.....	.....	.....	125,101
\$74	\$1,932	.....	.....	.....	.....	.....	.....	657	71,368
.....	865	.....	.....	.....	.....	.....	.....	96	137,292
.....	252	.....	.....	.....	.....	.....	.....	19	67,467
.....	113	.....	.....	.....	.....	.....	.....	22	39,993
.....	.....	.....	.....	.....	.....	.....	.....	.....	49,019
74	3,152	.....	.....	.....	.....	.....	.....	847	365,139
207	3,234	.....	\$535	.....	.....	\$10	.....	1,359	626,002
514	3,745	.....	347	\$1,486	\$70	.....	.....	2,730	959,015
382	12,651	.....	637	545	300	75	.....	17,142	622,316
1,037	2,075	.....	161	594	628	.....	.....	6,923	850,011
1,414	1,940	\$257	981	35,690	3,595	1,310	\$42	14,687	870,873
3,354	23,645	237	2,661	38,515	4,593	1,395	42	42,634	4,004,217
.....	.....	.....	.....	.....	.....	.....	.....	.....	8,450
.....	.....	.....	.....	.....	.....	.....	.....	.....	6,554
.....	.....	.....	.....	.....	.....	.....	.....	.....	1,787
.....	.....	.....	.....	.....	.....	.....	.....	190	2,778
.....	.....	.....	.....	.....	.....	.....	.....	190	19,569
.....	.....	.....	.....	.....	.....	.....	.....	62	34,049
.....	18	.....	.....	.....	.....	.....	.....	.....	57,946
.....	.....	.....	.....	.....	.....	.....	.....	68	45,396
.....	.....	.....	.....	.....	.....	.....	.....	.....	21,477
20	.....	.....	.....	.....	.....	.....	.....	.....	14,165
20	18	.....	.....	.....	.....	.....	.....	130	172,294
.....	.....	.....	.....	.....	.....	.....	.....	.....	45,968
.....	198	.....	.....	.....	.....	.....	.....	.....	73,768
28	1,155	.....	.....	.....	.....	.....	.....	84	49,296
.....	.....	.....	.....	.....	.....	.....	.....	6,674	45,570
.....	.....	.....	.....	.....	.....	.....	.....	260	66,239
28	1,353	.....	.....	.....	.....	.....	.....	7,027	261,960
.....	.....	.....	.....	.....	.....	.....	.....	.....	3,265

Districts.	Years.	Oil.	Fish.	Wood, and manu- factures of.	Beef and tallow.	Butter and cheese.
Salem and Beverly	1854	.....	\$1,433	\$1,632	.....	.....
	1855	.....	.....	1,222	.....	.....
	.....	.....	1,433	2,854	.....	.....
Fall River	1854	.....	.....	100	.....	.....
	1855	\$315	474	741	\$213	\$53
	1856	.....	106	1,901	40	90
	1857	1,117	70	2,054	48	54
	1858	357	.....	837	.....	8
.....	.....	1,780	650	4,933	301	1,028
New Bedford	1854	2,294	88	2,580	.....	.....
	1855	13,752	175	21,685	.....	105
	1856	3,261	.....	10,709	.....	.....
	1857	2,104	.....	4,702	.....	.....
	1858	3,400	.....	1,944	.....	.....
.....	.....	24,811	263	41,620	.....	105
Providence	1854	1,933	135	31,317	.....	.....
	1855	.....	.....	46,971	.....	.....
	1856	1,077	.....	23,191	.....	.....
	1857	951	190	44,736	.....	.....
	1858	.....	.....	18,150	.....	.....
.....	.....	3,961	255	169,365	.....	.....
Bristol and Warren	1854	7,959	182	94,586	48	99
	1855	7,322	.....	31,106	.....	.....
	1856	11,246	.....	41,415	230	965
	1857	11,723	202	31,422	62	579
	1858	14,405	45	96,507	.....	105
.....	.....	52,655	429	135,636	340	669
Newport	1854	54	190	8,790	.....	2,419
	1855	444	10	19,484	179	941
	1856	.....	.....	7,781	.....	290
	1857	3,875	.....	9,459	.....	180
	1858	300	.....	12,767	.....	100
.....	.....	4,673	130	51,911	179	3,920
New London	1858	109	.....	1,416	.....	.....
Delaware	1855	.....	.....	1,192	.....	.....
	1858	.....	.....	.....	.....	.....
.....	.....	.....	.....	1,192	.....	.....
Richmond	1854	.....	.....	.....	.....	.....
	1855	.....	.....	3,664	.....	.....
	1856	.....	.....	7,941	.....	.....
	1857	.....	.....	12,345	.....	25
	1858	.....	.....	6,052	.....	.....
.....	.....	.....	.....	30,002	.....	25
Norfolk	1854	.....	431	22,197	740	190
	1855	.....	.....	46,946	178	368
	1856	.....	.....	23,260	.....	.....
	1857	.....	.....	96,507	.....	.....
	1858	.....	.....	16,578	.....	.....
.....	.....	.....	431	135,486	918	561

—Continued.

Flour and grain.	Vegetables.	Rice.	Soap and candles.	Iron and man- ufactures of.	Household furni- ture.	Carriages, and parts of.	Coal.	All other articles.	Total.
.....	\$372	\$3,337
.....	1,222
.....	972	4,559
.....	903	786
.....	954	10,009
.....	931	5,721
.....	934	12,521
.....	165	5,786
.....
.....	1,087	34,827
.....
.....	3,087	9,780
.....	4,496	54,444
.....	1,889	17,162
.....	285	7,267
.....	3,550	10,039
.....	13,267	98,692
.....
.....	1,664	42,244
.....	11	50,041
.....	19	31,819
.....	2,645	57,421
.....	1,261	24,521
.....
.....	5,593	206,116
.....
.....	11,983	58,020
.....	2,150	65,731
.....	702	60,016
.....	1,060	70,939
.....	5,629	73,977
.....
.....	22,324	330,682
.....
.....	12,340	34,518
.....	3,230	37,164
.....	467	40,158
.....	4,314	47,348
.....	583	56,497
.....
.....	90,934	215,685
.....
.....	60	1,585
.....
.....	1,192
.....	13,750
.....
.....	13,750	14,942
.....
.....	4,624	13,185
.....	646	11,677
.....	157	8,523
.....	69	14,456
.....	6	6,129
.....
.....	705	53,970
.....
.....	1,220	35,849
.....	1,199	52,669
.....	22,260
.....	27,817
.....	150	17,303
.....
.....	1,370	156,898

STATEMENT

Districts.	Years.	Oil.	Fish.	Wood, and manu- factures of.	Beef and mallow.	Butter and cheese.	Pork, lard, hams, and bacon.
Alexandria	1854	.....	.....	.....	.....	.....	.....
Camden	1854	.....	.....	\$1,100	.....	.....	.....
Wilmington	1854	\$5,131	.....	80,374	.....	.....	.....
	1855	.....	.....	44,688	.....	.....	.....
	1856	.....	.....	50,838	.....	.....	.....
	1857	.....	.....	83,905	.....	.....	.....
	1858	.....	.....	80,600	.....	.....	.....
		5,131	.....	349,699	.....	.....	.....
Georgetown	1854	.....	.....	9,063	.....	.....	.....
	1855	.....	.....	13,494	.....	.....	.....
	1856	.....	.....	2,307	.....	.....	.....
	1858	.....	.....	1,340	.....	.....	.....
		.....	.....	26,134	.....	.....	.....
Savannah	1854	.....	.....	34,839	.....	.....	.....
	1855	.....	.....	33,393	.....	.....	.....
	1856	.....	.....	19,534	\$918	.....	.....
	1857	.....	.....	67,167	.....	.....	507
	1858	.....	.....	56,836	.....	.....	259
		.....	.....	211,771	218	.....	2,443
St. Mary's	1854	.....	.....	4,479	.....	.....	.....
	1855	.....	.....	6,572	.....	.....	.....
	1856	.....	.....	9,746	.....	.....	.....
	1857	.....	.....	21,770	.....	.....	.....
	1858	.....	.....	31,849	.....	.....	.....
		.....	.....	74,416	.....	.....	.....
Brunswick	1855	.....	.....	3,008	.....	.....	.....
	1857	.....	.....	2,435	.....	.....	.....
	1858	.....	.....	1,848	.....	.....	.....
		.....	.....	7,291	.....	.....	.....
Mobile	1854	.....	.....	41,610	2,111	.....	.....
	1855	.....	.....	94,469	4,184	.....	.....
	1856	.....	.....	47,715	4,300	.....	.....
	1857	.....	.....	89,828	3,100	.....	.....
	1858	.....	.....	95,068	2,940	.....	.....
		.....	.....	368,690	23,645	.....	.....
Pensacola	1854	.....	.....	4,104	.....	.....	.....
	1855	.....	.....	33,329	.....	.....	.....
	1856	.....	.....	36,425	.....	.....	.....
	1857	.....	.....	39,614	.....	.....	.....
	1858	.....	.....	88,546	.....	.....	.....
		.....	.....	202,471	.....	.....	.....
Key West	1854	.....	\$6,044	.....	.....	.....	.....
	1855	.....	17,843	.....	.....	.....	.....
	1856	.....	23,049	.....	.....	.....	.....
	1857	.....	17,907	3,910	.....	.....	.....
	1858	.....	23,066	4,569	.....	.....	.....
		.....	87,902	8,499	.....	.....	.....

—Continued.

Flour and grain.	Vegetables.	Rice.	Soap and candles.	Iron and man- ufactures of.	Household furni- ture.	Carriages, and parts of.	Coal.	All other articles.	Total.
.....	\$7,640	.....	\$7,640
.....	\$15	1,115
\$100	\$1,175	.....	.....	.....	.....	.....	3,547	90,387
.....	630	.....	.....	.....	.....	.....	3,985	48,577
.....	940	.....	.....	.....	.....	.....	2,039	53,117
1,200	1,800	.....	.....	.....	.....	.....	1,763	96,768
.....	3,177	84,977
1,360	3,845	.....	.....	.....	.....	.....	13,791	373,886
.....	9,063
.....	88	13,512
.....	2,307
.....	1,340
.....	86	26,322
.....	167,391	.....	\$60	.....	.....	.....	.....	302,190
.....	\$595	143,456	.....	.....	.....	.....	.....	.....	177,374
110	508	166,596	.....	\$156	110	.....	.....	775	168,912
2,100	945	137,483	.....	200	.....	.....	904	335	199,651
2,195	550	189,561	.....	407	.....	.....	.....	1,297	944,637
4,405	2,506	787,327	763	179	.....	.....	904	2,437	1,612,964
.....	4,479
.....	6,573
.....	9,745
.....	21,770
.....	31,849
.....	74,416
.....	3,086
.....	2,435
.....	1,848
.....	7,391
.....	5,096	48,749
.....	972	90,635
.....	1,445	53,469
.....	1,090	94,018
.....	106,006
.....	8,536	400,870
.....	4,104
.....	33,322
.....	36,625
.....	39,614
.....	68,546
.....	302,471
.....	250	.....	.....	.....	1,630	7,674
.....	400	18,493
9,258	1,050	.....	.....	108	.....	.....	.....	3,465	23,042
.....	140	34,968
9,258	1,060	.....	.....	368	.....	.....	.....	5,635	27,795
.....	112,008

STATEMENT

Districts.	Years.	Oil.	Fish.	Wood, and manu- factures of.	Beef and tallow.	Butter and cheese.	Pork, lard, hams, and bacon.
St. John's	1854	.....	.....	\$1,511,758	.....	.....	.....
	1855	.....	.....	50,414	.....	.....	.....
	1856	.....	.....	17,476	.....	.....	.....
	1857	.....	.....	286,846	.....	.....	.....
	1858	.....	.....	47,065	.....	.....	.....
		.....	.....	1,913,559	.....	.....	.....
Appalachicola	1856	.....	.....	501	.....	.....	.....
	1857	.....	.....	900	.....	.....	.....
		.....	.....	701	.....	.....	.....
Fernandina.....	1858	.....	.....	19,976	.....	.....	.....
Teché.....	1857	.....	.....	1,225	.....	.....	.....
Perth Amboy, N. J.....	1857	.....	.....	.....	.....	.....	.....
San Francisco.....	1857	.....	.....	.....	.....	.....	.....
	1858	.....	.....	.....	.....	.....	.....

RECAPITU

Total domestic exports ..	1854	\$143,409	\$113,567	\$3,486,796	\$190,007	\$94,446	\$1,373,361
	1855	112,505	109,543	3,189,225	175,896	73,450	1,419,914
	1856	100,138	179,752	2,546,591	151,049	88,179	1,490,296
	1857	99,725	155,143	3,264,271	139,951	101,968	1,509,562
	1858	107,440	129,623	2,936,828	221,928	142,463	2,170,900
		563,217	687,628	15,413,771	938,761	500,506	7,966,431

—Continued.

Flour and grain.	Vegetables.	Rice.	Soap and candles.	Iron, and manu- factures of.	Household furni- ture.	Carriages, and parts of.	Coal.	All other articles.	Total.
.....	\$1,511,758
.....	50,414
.....	17,476
.....	286,846
.....	47,065
.....	1,913,559
.....	1,487
.....	700
.....	2,187
.....	19,976
.....	1,825
.....	1,091
.....	\$1,091	.....	1,091
.....	45,090
.....	35,000
.....	80,090
.....	80,090

LATION.

\$208,007	\$72,636	\$653,187	\$68,118	\$615,946	\$60,066	\$16,426	\$57,646	\$624,578	\$6,228,116
59,589	106,025	812,305	141,162	733,742	55,997	19,434	89,072	509,270	7,607,119
55,890	124,583	559,246	97,633	685,757	109,598	16,658	48,111	865,562	7,199,035
515,246	154,537	641,256	109,912	1,029,683	107,422	78,242	62,948	1,409,340	9,379,582
325,898	173,390	635,650	93,234	1,721,049	192,270	164,245	46,918	2,561,251	11,673,167
1,164,630	631,171	3,501,644	530,049	4,966,157	525,353	295,005	334,695	6,068,001	44,067,019

Total foreign merchandise exported to Cuba from the United States in 1854.....	\$323,636
Do.....do.....do.....do.....1855.....	397,463
Do.....do.....do.....do.....1856.....	610,326
Do.....do.....do.....do.....1857.....	5,543,561
Do.....do.....do.....do.....1858.....	2,760,024
	<u>9,635,212</u>

F. BIGGER, Register.

TREASURY DEPARTMENT, Register's Office, March 2, 1859.

REPORT OF THE POSTMASTER GENERAL,

COMMUNICATING,

In compliance with a resolution of the Senate, a copy of the contract with J. Butterfield and his associates for carrying the mail from the Mississippi river to the Pacific ocean.

MARCH 3, 1859.—Ordered to lie on the table and be printed.

POST OFFICE DEPARTMENT,
March 3, 1859.

SIR: Agreeably to the resolution of the Senate of the 17th ultimo, I have the honor to furnish herewith, marked A, a copy of the contract with John Butterfield and his associates for carrying the mail from the Mississippi river to the Pacific ocean, or from or to any intermediate points, and also a copy of the act of Congress approved March 3, 1857, under which the contract was made.

No other contract or agreement has been made and no other securities given, except those named in the copy herewith sent.

Payments have been made as follows:

November 1, 1858, to John Butterfield, assignee.....	\$24,456 52
February 4, 1859, to John Butterfield, assignee.....	50,000 00
February 7, 1859, to H. F. Vail, cashier, assignee.....	50,000 00
February 12, 1859, to H. F. Vail, cashier, assignee.....	50,000 00

174,456 52

all on account of services for the quarter ending December 31, 1858.

I also transmit herewith a statement, marked B, showing the time made each trip between San Francisco and the Mississippi river.

It is impossible at this time to state *fully* "what letters, packages, and despatches, or other matter, have been carried or transported by said company" and the amount of postages thereon, or the number of passengers conveyed and for what compensation.

On the 18th instant the postmasters at St. Louis and Memphis were instructed, by telegraph, to report as far as possible on these points, and their answers are as follows:

The postmaster at St. Louis, under date of the 24th ultimo, sends copies of his accounts of mails received and sent, and says:

"The total receipts, as shown by these returns, is \$2,723 27. The free letters number 1,835. I have no certain data as to the number of letters or packages, but doubtless most of these letters passed for three cents, assuming half each 3 and 10 the number would be 59,000 exclusive of those free say, over 1,800.

"It is proper I should state, also, that since November last newspaper publishers at both ends have sent and received printed slips of news items free, as exchanges, which are not included as letters. The last mail, received since your order, was found to contain *twenty-three* through and *seventy-one* way packages. It is proper I should state, also, that the postmaster at San Francisco was, until lately, in the habit of making up packages direct for many distributing post offices on the Atlantic seaboard, and even some of the interior offices, east and north of here, and he still makes up direct for the New York office, thus making the value of mail matter which I communicate much smaller than it is in fact. These letters, also, all pay 10 cents.

"There are several points in this connexion to which I wish to ask your attention.

"First. When this mail went into operation I did not feel willing to transmit letters over the route unless the parties sending them requested this route to be used, and placed on the letter 'via overland.'

"Second. The country tributary to this distributing post office had directed so long their packages 'via New York,' that the habit continued until recently, thus, in fact, cutting a supply from this route.

"Third. The 'way stations,' for a long time continued to be supplied by the old, although less direct routes; and hence our 'way mails' continued small.

"But all these difficulties are fast fading away, and the through and way mails are constantly increasing. The line is so regular that many offices (especially within the week after the departures of the steamers) send their through matter this way, and thus always anticipate the next steamer, while the way offices are by this route supplied, not only days, but often weeks, in advance of former methods. As the route becomes more known, its transit being so regular, the business greatly increases.

"I am as yet unable to answer the last part of your inquiry relative to passengers."

The postmaster at Memphis also sends copies of his accounts, showing postages to the amount of \$247 74, but attempts no enumeration of the letters.

Assuming that there were an equal number of three and ten cent letters, (as done by the postmaster at St. Louis,) the number would be

be	5,367
Number of free letters.....	189
Whole number at St. Louis, including free letters.....	60,800

Total to February 24..... 66,356

The report of the postmaster at St. Louis affords probably a near approximation to the number of letters conveyed between that point and San Francisco and intermediate points, namely, 60,800.

His accounts show the actual postage..... \$2,723 27
 Estimate of number of letters at Memphis..... 5,556 247 74

Total to February 24..... 66,356 2,971 01

Postmasters having had no instructions to keep separate accounts of letters sent and received by the route in question, it is now next to impossible, by any means, to make a correct enumeration as to the past. The nearest approach to it would be by examining all the post bills received at the several post offices on the route and the bills shown by the accounts to have been sent from those offices to offices on other routes, involving an amount of labor which could not be accomplished by the regular clerical force in addition to the current duties of this department.

The post bills to San Francisco (and California generally) are not returned to this department, on account of their great bulk, but retained in that office. The postmaster was written to on 19th instant, and instructed to furnish all possible information in answer to the inquiries as to the number of letters and passengers conveyed; but, of course, his answer cannot be received in time to be laid before the present Congress.

In future monthly reports will be made to this department of the actual number of letters, &c., conveyed, with the amount of postages, so that a more full and satisfactory answer to the inquiries of the Senate can be submitted at the meeting of the next Congress.

In reference to the number of passengers conveyed and the compensation made for the same over the said route, inquiries have been addressed to the general office of the company, New York, and whatever reply is received will be laid before the Senate at the earliest possible moment.

I have the honor to be, very respectfully, &c.,

HORATIO KING,

Acting Postmaster General.

PRESIDENT OF THE SENATE.

OVERLAND MAIL SERVICE TO CALIFORNIA.

In order to carry into effect the act of Congress approved the third of March, 1857, relative to the overland mail to California, the department issued the following notice, and caused the same to be regularly advertised according to law:

“POST OFFICE DEPARTMENT, *April* 20, 1857.

“An act of Congress, approved March 3, 1857, making appropriations for the service of the Post Office Department for the fiscal year ending June 30, 1858, provides:

" 'SEC. 10. That the Postmaster General be, and he is hereby authorized to contract for the conveyance of the entire letter mail from such point on the Mississippi river as the contractors may select to San Francisco, in the State of California, for six years, at a cost not exceeding three hundred thousand dollars per annum for semi-monthly, four hundred and fifty thousand dollars for weekly, or six hundred thousand dollars for semi-weekly service, to be performed semi-monthly, weekly, or semi-weekly, at the option of the Postmaster General.

" 'SEC. 11. That the contract shall require the service to be performed with good four-horse coaches or spring wagons, suitable for the conveyance of passengers as well as the safety and security of the mails.

" 'SEC. 12. That the contractor shall have the right of pre-emption to three hundred and twenty acres of any land not then disposed of or reserved, at each point necessary for a station, not to be more than ten miles from each other; and provided that no mineral lands shall be thus pre-empted.

" 'SEC. 13. That the said service shall be performed within twenty-five days for each trip; and that, before entering into such contract the Postmaster General shall be satisfied of the ability and disposition of the parties *bona fide* and in good faith to perform the said contract and shall require good and sufficient security for the performance of the same—the service to commence within twelve months after signing the contract."

" Proposals will accordingly be received at the Contract Office of the Post Office Department until 3 p. m. of the 1st day of June, 1857 for conveying mails under the provisions of the above act.

" Besides the starting point on the Mississippi river, bidders may name intermediate points proposed to be embraced in the route, and otherwise designate its course as nearly as practicable.

" Separate proposals are invited for *semi-monthly*, *weekly*, and *semi-weekly* trips each way.

" The decision upon the proposals offered will be made after the Postmaster General shall be satisfied of the ability and disposition of the parties in good faith to perform the contract.

" A guarantee is to be executed, with good and sufficient security, that the contract shall be executed, with like good security, when the contractor or contractors shall be required to do so by the Postmaster General, and the service must commence within twelve months after the date of such contract."

In pursuance of the said advertisement, the Postmaster General and his three assistants assembled in the Contract Office and opened the respective bids, making the following abstract of them, and caused said abstract to be copied into a separate book, and also in the book for California.

ABSTRACT OF THE BIDS.

John Butterfield, William B. Dinsmore, William G. Fargo, John V. P. Gardner, Marcus L. Kinyon, Hamilton Spencer, and Alexander Holland: From St. Louis, by Springfield, and from Memphis, by L.

Rock, connecting at a common point at or eastward of Albuquerque; thence west, to and along the military road to Colorado river; thence up the valley of the Mohahoc river, to and through the Tejon passes of the Sierra Nevada; and thence along the best route to San Francisco; *weekly*, \$450,000; *semi-weekly*, \$600,000.

John Butterfield and others: From Memphis, by Little Rock, Albuquerque, mouth of Mohahoc, on the Colorado river, and one of the Tejon passes of the Sierra Nevada, to San Francisco; *semi-monthly*, \$300,000; *weekly*, \$450,000; *semi-weekly*, \$595,000.

John Butterfield and others: From St. Louis, by Springfield, to Albuquerque; thence, as above, to San Francisco; *semi-monthly*, \$300,000; *weekly*, \$450,000; *semi-weekly*, \$585,000.

James E. Birch: From Memphis, by Little Rock, Washington, Fulton, Clarksville, Gainesville, Fort Chadbourne, head spring of Conche river, to Pecos river, nearly due west; thence, along said Pecos river, Delaware creek, through the Guadalupe and Hueco mountains, to the Rio Grande; thence, over the emigrant road, to Fort Yuma; thence, by San Gorgona Pass, San Bernardino, Tejon, Tulare, or Salinas valleys, to San Francisco; *semi-weekly*, \$600,000.

James Glover: From Memphis, by Helena, Little Rock, across Texas, to El Paso, Fort Yuma, San Bernardino, Los Angeles; thence, between the Coast Range and Sierra Nevada mountains, to San Francisco; or, from Vicksburg, by Shreveport, to El Paso, &c., &c., (as above;) *semi-monthly*, \$300,000; *weekly*, \$450,000; *semi-weekly*, \$600,000.

S. Howell and A. E. Pace: From Gaines' Landing, on the Mississippi, to San Francisco; term of four years; commence at Vicksburg, if preferred; *weekly*, \$1,000,000 for the first year, \$800,000 for the second year, \$700,000 for the third year, \$600,000 for the fourth year.

David D. Mitchell, Samuel B. Churchill, Robert Campbell, William Gilpin, and others: From St. Louis to San Francisco; *semi-weekly*, \$600,000.

James Johnston, jr., and Joseph Clark: From St. Louis, by Fort Independence, Fort Laramie, Salt Lake City, or any other point named by the department, to San Francisco; *semi-monthly*, \$260,000; *weekly*, \$390,000; *semi-weekly*, \$520,000.

Irregular (after time) bid. *William Hollingshead*, president of Minnesota, Nebraska, and Pacific Mail Transportation Company: From St. Paul, by Fort Ridgeley, South Pass, Soda Springs, Humboldt river, Honey Lake valley, Noble's Pass, Shasta City, to Francisco; *semi-weekly*, \$550,000.

On the second day of July, 1857, the department, after full and mature consideration, made the following order in relation to the route selected and the bid accepted:

" 12,578. From St. Louis, Missouri, and from Memphis, Tennessee, converging at Little Rock, Arkansas; thence, *via* Preston, Texas, or as nearly so as may be found advisable, to the best point of crossing the Rio Grande, above El Paso, and not far from Fort Fillmore; thence, along the new road being opened and constructed under the direction of the Secretary of the Interior, to Fort Yuma, California;

thence, through the best passes, and along the best valleys for a and expeditious staging, to San Francisco.

"The foregoing route is selected for the overland mail service California, as combining, in my judgment, more advantages and disadvantages than any other.

"No bid having been made for this particular route, and all bidders (whose bids were considered regular under the advertisement and the act of Congress) having consented that their bids may be and considered as extending and applying to said route:

"Therefore, looking at the respective bidders, both as to the amount proposed and the ability, qualifications, and experience of the bidders to carry out a great mail service like this, I hereby order that the proposal of John Butterfield, of Utica, New York; William B. Deane, of New York city; William G. Fargo, of Buffalo, New York; James V. P. Gardner, of Utica, New York; Marcus L. Kinyan, of Rome, New York; Alexander Holland, of New York city, and Hamilton Spencer, of Bloomington, Illinois, at the sum of \$595,000 (five hundred and ninety-five thousand dollars) per annum for semi-weekly service, be accepted; the contractors, however, to have the privilege of selecting lands, under the act of Congress, on only one of the roads or branches, between Little Rock and the Mississippi river—the one selected by them to be made known and inserted in the contract at the time of its execution."

Subsequently, on re-examining the proposal, the above acceptance was modified so as to fix the pay at \$600,000 per annum, that being the true amount of the bid.

Under strong representations that a better junction of the two branches of said road could be made at Preston than at Little Rock on the eleventh day of September, 1857, the following order was made:

"That whenever the contractors and their sureties shall file in the Post Office Department a request, in writing, that they desire to make the junction of the two branches of said road at Preston, instead of Little Rock, the department will permit the same to be done at some route not further west than to Springfield, Missouri, thence to Fayetteville, Van Buren, and Fort Smith, in the State of Arkansas to the said junction, at or near the town of Preston, in Texas; the said new line will be adopted on the express condition that the said contractors shall not claim or demand from the department, or from Congress, any increased compensation for or on account of such change in the route from St. Louis, or of the point of junction of the two routes from Little Rock to Preston; and on the further express condition that whilst the amount of lands to which the contractors may be entitled under the act of Congress may be estimated on either of said branches from Preston to St. Louis or Memphis, at their option, yet the said contractors shall take one-half of that amount on each of said branches, so that neither shall have an advantage in the way of stations and settlement over the other; and in case said contractors in selecting and locating their lands, shall disregard this condition or give undue advantage to one of said branches over the other, the department reserves the power of discontinuing said new route and

St. Louis to Preston, and to hold said contractors and their sureties to the original route and terms expressed and set forth in the body of this contract."

In pursuance of the above orders and proceedings, on the 16th day of September, 1857, the following contract was entered into between the department and the contractors whose bid has been accepted :

A.

No. 12,578.—\$600,000 per annum.

This article of contract, made the sixteenth day of September, in the year one thousand eight hundred and fifty-seven, between the United States (acting in this behalf by their Postmaster General) and John Butterfield, of Utica, New York, William B. Dinsmore, of New York city, William G. Fargo, of Buffalo, New York, James V. P. Gardner, of Utica, New York, Marcus L. Kinyon, of Rome, New York, Alexander Holland, of New York city, and Hamilton Spencer, of Bloomington, Illinois, and Danford N. Barney, of the city of New York, Johnston Livingston, of Livingston, New York, David Moulton, of Floyd, New York, and Elijah P. Williams, of Buffalo, New York, witnesseth :

That whereas John Butterfield, William B. Dinsmore, William G. Fargo, James V. P. Gardner, Marcus L. Kinyon, Alexander Holland, and Hamilton Spencer, have been accepted, according to law, as contractors for transporting the entire letter mail, agreeably to the provisions of the 11th, 12th, and 13th sections of an act of Congress, approved March 3, 1857, (making appropriations for the service of the Post Office Department for the fiscal year ending June 30, 1858,) from the Mississippi river to San Francisco, California, as follows, viz: from St. Louis, Missouri, and from Memphis, Tennessee, converging at Little Rock, Arkansas; thence, *via* Preston, Texas, or as near so as may be found advisable, to the best point of crossing the Rio Grande above El Paso, and not far from Fort Fillmore; thence, along the new road being opened and constructed under the direction of the Secretary of the Interior, to or near Fort Yuma, California; thence, through the best passes and along the best valleys for safe and expeditious staging, to San Francisco, California, and back, twice a week, in good four-horse post coaches or spring wagons suitable for the conveyance of passengers as well as the safety and security of the mails, at six hundred thousand dollars a year, for and during the term of six years, commencing the sixteenth day of September, in the year one thousand eight hundred and fifty-eight, and ending with the fifteenth day of September, in the year one thousand eight hundred and sixty-four: Now, therefore, the said John Butterfield, William B. Dinsmore, William G. Fargo, James V. P. Gardner, Marcus L. Kinyon, Alexander Holland, and Hamilton Spencer, contractors, and Danford N. Barney, Johnston Livingston, David Moulton, and Elijah P. Williams, their sureties, do jointly and severally undertake, covenant, and agree with the United States, and do bind themselves: 1st. To carry said letter mail within the time fixed by the law above referred to—that is, within twenty-five days

for each trip, and according to the annexed schedule of departures and arrivals; 2d. To carry said letter mail in a safe and secure manner, free from wet or other injury, in a boot, under the driver's seat, or other secure place, and in preference to passengers, and to their entire exclusion, if its weight and bulk require it; 3d. To take the said letter mail and every part of it from, and deliver it and every part of it at, each post office on the route, or that may hereafter be established on the route, and into the post office at each end of the route, and into the post office at the place at which the carrier stops at night, if one is there kept; and if no office is there kept, to lock it up in some secure place, at the risk of the contractors.

They also undertake, covenant, and agree with the United States, and do bind themselves, jointly and severally, as aforesaid, to be answerable for the persons to whom the said contractors shall commit the care and transportation of the mail, and accountable to the United States for any damages which may be sustained by the United States through their unfaithfulness or want of care; and that the said contractors will discharge any carrier of said mail when required to do so by the Postmaster General; also, that they will not transmit, by themselves or their agent, or be concerned in transmitting, commercial intelligence more rapidly than by mail, other than by telegraph, and that they will not carry out of the mail letters or newspapers which should go by post; and further, the said contractors will convey, without additional charge, the special agents of the department, on the exhibition of their credentials.

They further undertake, covenant, and agree with the United States, that the said contractors will collect quarterly, if required by the Postmaster General, of postmasters on said route, the balances due from them to the General Post Office, and faithfully render an account thereof to the Postmaster General in the settlement of quarterly accounts, and will pay over to the General Post Office all balances remaining in their hands.

For which services, when performed, the said John Butterfield, William B. Dinsmore, William G. Fargo, James V. P. Gardner, Marcus L. Kinyon, Alexander Holland, and Hamilton Spencer, contractors, are to be paid by the United States the sum of six hundred thousand dollars a year, to wit: quarterly, in the months of May, August, November, and February, through the postmasters on the route, or otherwise, at the option of the Postmaster General of the United States; said pay to be subject, however, to be reduced or discontinued by the Postmaster General, as hereinafter stipulated, or to be suspended in case of delinquency.

It is hereby also stipulated and agreed by the said contractors and their sureties, that in all cases there is to be a forfeiture of the pay of a trip when the trip is not run; and of not more than three times the pay of the trip when the trip is not run and no sufficient excuse for the failure is furnished; and a forfeiture of a due proportion of it when a grade of service is rendered inferior to the mode of conveyance above stipulated; and that these forfeitures may be increased into penalties of higher amount, according to the nature or frequency of the failure and the importance of the mail; also, that fines may be

imposed upon the contractors, unless the delinquency be satisfactorily explained to the Postmaster General in due time, for failing to take from or deliver at a post office the said letter mail or any part of it ; for suffering it to be wet, injured, lost or destroyed ; for carrying it in a place or manner that exposes it to depredation, loss, or injury, by being wet or otherwise ; for refusing, after demand, to convey a letter mail by any coach or wagon which the contractors regularly run or are concerned in running on the route beyond the number of trips above specified ; or for not arriving at the time set in the schedule. And for setting up or running an express to transmit letters or commercial intelligence in advance of the mail, or for transmitting knowingly, or after being informed, any one engaged in transporting letters or mail matter in violation of the laws of the United States, a penalty may be exacted of the contractors equal to a quarter's pay ; but in all other cases no fine shall exceed three times the price of the trip. And whenever it is satisfactorily shown that the contractors, their carrier or agent, have left or put aside the said letter mail, or any portion of it, for the accommodation of passengers, they shall forfeit not exceeding a quarter's pay.

And it is hereby further stipulated and agreed by the said contractors and their sureties that the Postmaster General may annul the contract for repeated failures ; for violating the post office laws ; for disobeying the instructions of the department ; for refusing to discharge a carrier when required by the department ; for assigning the contract, or any part of it, without the consent of the Postmaster General ; for setting up or running an express as aforesaid ; or for transporting persons conveying mail matter out of the mail as aforesaid ; or whenever either of the contractors shall become a postmaster, assistant postmaster, or member of Congress : and this contract shall in all its parts be subject to the terms and requirements of an act of Congress passed on the twenty-first day of April, in the year of our Lord one thousand eight hundred and eight, entitled "An act concerning public contracts."

And the Postmaster General may also annul the contract whenever he shall discover that the same, or any part of it, is offered for sale in the market for the purpose of speculation.

It is hereby further stipulated and agreed, that if obstacles, such as the want of water or feed, or physical obstructions, should be found between the points herein designated, so that time cannot be made, and a better line can be found between those points, the Postmaster General may vary the route to such better line.

And it is also further understood and agreed, that the contractors shall have all the rights of pre-emption, whatever they may be, secured by the 12th section of the act of Congress aforesaid, approved March 3, 1857, on either of the lines from the Mississippi river to the point of their junction with the main stem, but not on both—the election to be made by them at any time within twelve months after the date of the execution of this contract.

In witness whereof, the said Postmaster General has caused the seal of the Post Office Department to be hereto affixed, and has attested the same by his signature, and the said contractors and their sureties

have hereunto set their hands and seals the day and year set opposite their names respectively.

AARON V. BROWN, [L. S.]
Postmaster General

JOHN BUTTERFIELD.	[L. S.]	Sept. 11
W. B. DINSMORE.	[L. S.]	"
WM. G. FARGO.	[L. S.]	"
J. V. P. GARDNER.	[L. S.]	"
M. L. KINYON.	[L. S.]	"
ALEX. HOLLAND.	[L. S.]	"
H. SPENCER.	[L. S.]	"
D. N. BARNEY.	[L. S.]	"
JOHNSTON LIVINGSTON.	[L. S.]	"
DAVID MOULTON.	[L. S.]	"
ELIJAH P. WILLIAMS.	[L. S.]	"

Signed, sealed, and delivered by the Postmaster General in the presence of—

WM. H. DUNDAS.

And by the other parties hereto in the presence of—

REVERDY JOHNSON.

ISAAC V. FOWLER.

I hereby certify that I am well acquainted with Danford N. Barney, Johnston Livingston, David Moulton, and Elijah P. Williams, and the condition of their property, and that, after full investigation and inquiry, I am well satisfied that they are good and sufficient sureties for the amount in the foregoing contract.

ISAAC V. FOWLER,
Postmaster at New York, N. Y.

[Endorsement.]

Ordered: That whenever the contractors and their securities shall file in the Post Office Department a request in writing that they desire to make the junction of the two branches of said road at Preston, instead of Little Rock, the department will permit the same to be done by some route not further west than to Springfield, in Missouri, thence by Fayetteville, Van Buren, and Fort Smith, in the State of Arkansas, to the said junction at or near the town of Preston in Texas; but said new line will be adopted on the express condition that the said contractors shall not claim or demand from the department or from Congress any increased compensation for or on account of such change in the route from St. Louis, or of the point of junction of the two routes from Little Rock to Preston; and on the further express condition, that whilst the amount of lands to which the contractors may be entitled under the act of Congress may be estimated on either of said branches from Preston to St. Louis, or Memphis, at their option, yet the said contractors shall take one-half of that amount on each of said branches, so that neither shall have an advantage in the way of stations and settlement over the other; and in case said

contractors, in selecting and locating their lands, shall disregard this condition, or give undue advantage to one of said branches over the other, the department reserves the power of discontinuing said new route from St. Louis to Preston, and to hold said contractors and their securities to the original route and terms expressed and set forth in the body of this contract.

AARON V. BROWN,
Postmaster General.

SEPTEMBER 11, 1857.

B.

A table showing the time in carrying the great overland mail between St. Louis and Memphis and San Francisco, route No. 12578, from September 16, 1858, to December 31, 1858.

Date of departure from St. Louis and Memphis.	Date of arrival at San Francisco.	Number of days in making trip.
September 16, 1858.....	October 10, 1858.....	24
September 20, 1858.....	October 15, 1858.....	25
September 23, 1858.....	October 17, 1858.....	24
September 27, 1858.....	October 23, 1858.....	26
September 30, 1858.....	October 26, 1858.....	26
October 4, 1858.....	October 30, 1858.....	26
October 7, 1858.....	November 1, 1858.....	25
October 11, 1858.....	November 5, 1858.....	25
October 14, 1858.....	November 7, 1858.....	24
October 18, 1858.....	November 12, 1858.....	25
October 21, 1858.....	November 15, 1858.....	25
October 25, 1858.....	November 19, 1858.....	25
October 28, 1858.....	November 22, 1858.....	25
November 1, 1858.....	November 27, 1858.....	26
November 4, 1858.....	November 29, 1858.....	25
November 8, 1858.....	December 2, 1858.....	24
November 11, 1858.....	December 6, 1858.....	25
November 15, 1858.....	December 11, 1858.....	26
November 18, 1858.....	December 16, 1858.....	28
November 22, 1858.....	December 18, 1858.....	26
November 25, 1858.....	December 20, 1858.....	25
November 29, 1858.....	December 25, 1858.....	26
December 2, 1858, St. Louis.....	December 25, 1858.....	23
December 2, 1858, Memphis.....	December 29, 1858.....	27
December 6, 1858, St. Louis.....	December 29, 1858.....	23
December 6, 1858, Memphis.....	January 3, 1859.....	28

B—Continued.

Date of departure from San Francisco.	Date of arrival at St. Louis.	Number of days in making trip.
September 16, 1858.....	October 9, 1858.....	23
September 20, 1858.....	October 16, 1858.....	26
September 24, 1858.....	October 18, 1858.....	24
September 27, 1858.....	October 23, 1858.....	26
October 1, 1858.....	October 26, 1858.....	25
October 4, 1858.....	October 30, 1858.....	26
October 8, 1858.....	November 3, 1858.....	26
October 11, 1858.....	November 6, 1858.....	26
October 15, 1858.....	November 9, 1858.....	25
October 18, 1858.....	November 14, 1858.....	27
October 22, 1858.....	November 16, 1858.....	25
October 25, 1858.....	November 20, 1858.....	26
October 29, 1858.....	November 24, 1858.....	26
November 1, 1858.....	November 28, 1858.....	27
November 5, 1858.....	December 2, 1858.....	27
November 8, 1858.....	December 4, 1858.....	26
November 12, 1858.....	December 9, 1858.....	27
November 15, 1858.....	December 11, 1858.....	26
November 19, 1858.....	December 15, 1858.....	26
November 22, 1858.....	December 17, 1858.....	25
November 26, 1858.....	December 22, 1858.....	26
November 29, 1858.....	December 25, 1858.....	26
December 3, 1858.....	December 30, 1858.....	27
December 6, 1858.....	January 1, 1859.....	26

Date of departure from San Francisco.	Date of arrival at Memphis.	Number of days in making trip.
September 16, 1858.....	October 13, 1858.....	27
September 20, 1858.....	October 18, 1858.....	28
September 24, 1858.....	October 21, 1858.....	27
September 27, 1858.....	October 28, 1858.....	31
October 1, 1858.....	October 29, 1858.....	28
October 4, 1858.....	November 1, 1858.....	28
October 8, 1858.....	November 7, 1858.....	30
October 11, 1858.....	November 9, 1858.....	29
October 15, 1858.....	November 12, 1858.....	28
October 18, 1858.....	November 18, 1858.....	31
October 22, 1858.....	January 6, 1859, returned back to San Francisco by mistake.	
October 25, 1858.....	November 23, 1858.....	29
October 29, 1858.....	November 25, 1858.....	27
November 1, 1858.....	December 1, 1858.....	30
November 5, 1858.....	December 5, 1858.....	30
November 8, 1858.....	December 6, 1858.....	28
November 12, 1858.....	December 11, 1858.....	29
November 15, 1858.....	December 11, 1858.....	26
November 19, 1858.....	December 17, 1858.....	28
November 22, 1858.....	December 23, 1858.....	36
November 26, 1858.....	December 28, 1858.....	32
November 29, 1858.....	December 28, 1858.....	29
December 3, 1858.....	January 3, 1859.....	31
December 6, 1858.....	January 6, 1859.....	31

